

Assessment of Energy Centres in Brazil

A prospective study for the creation of an
integrated energy centre in Brazil

Full Report

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Headlines

- The authors advise the British Embassy to create a Brazil-UK Energy Centre, with legitimacy, independence, and financial sustainability, involving leading stakeholders from the energy sector and academia.
- This project identified 419 relevant stakeholders for the purpose of creating an integrated energy centre in Brazil, being 175 energy companies, 86 associations, 117 research and development institutions, and 41 governmental bodies.
- 80 representative stakeholders were contacted and interviewed for this project through in-person meetings or online questionnaires. Most of the participants considered the initiative as very positive, but its success would depend on its governance model, funding source and operational system. It is fundamental to have a centre with credibility and influence.
- The energy centre could act as a centre of intelligence for energy strategies, contributing for a constructive dialogue with the energy sector and international partners, avoiding overlaps and competition with existing initiatives. Key areas of interest include project management, new technologies, bioenergy, smart-grids, distributed generation, regulation, international cooperation, renewable energies, and the transition to a low carbon economy.
- The capital costs for installing this centre are estimated at R\$ 153K in total (£ 31K), excluding property purchase. The estimated operational costs would vary from R\$ 295K (£ 59K) to R\$ 398K (£ 80K) a month, depending on location, staff and salaries involved. These estimates include property rentals, but buying a property is also an option. A high standard executive office with approximately 200 m² is estimated from R\$ 2,210K (£ 442K) to R\$ 2,502K (£ 500K). The cities of São Paulo, Rio de Janeiro and Brasília were assessed in this study.

Executive Summary

This report was commissioned by the British Embassy in Brazil and funded by the UK Prosperity Fund's Energy Programme through a public Terms of Reference. The research was conducted from August 2018 to December 2018, and its results were made available in January 2019. The objective was to assess existing energy centres in Brazil and carry out a survey with leading stakeholders in order to obtain information about the interest of these centres in having a national coordination body (with physical and/or virtual location). The work also involved the assessment of indicative costs to implement the proposed centre. Existing centres across the country were mapped and a description of their core businesses and contacts was included. Several organisations were listed and were methodologically grouped into the following categories:

- associations, including syndicates, unions and non-governmental organisations;
- energy companies with national influence;
- research and development institutions, such as university centres and laboratories;
- governmental bodies, including regulatory agencies and ministries.

In order to carry out the surveys, several organisations were contacted through in-person interviews and online questionnaires. Thus, it was possible to assess the interest of these organisations to build an energy centre, including their perceptions of the priority areas of action, the suggested models of performance, the advantages and disadvantages and of the possible sources of resistance. For the indicative costs, a conceptual model was established based on the analysis of existing centres. A set of key items was established for the full operation of a centre at minimum dimension and meeting the requirements presented in the proposal of the Energy Centre. The cost items were grouped into investments (property, information and communication technology - ICT, pieces of furniture, kitchen appliances and office equipment) and operational costs (personnel, contracted services, consumables, travel and accommodation). Taking in consideration how the assessed set of organisations was distributed at national level among other aspects such as air hub, the cities of Brasília, Rio de Janeiro and São Paulo were marked as potential locations to host the Energy Centre, in line with the original Terms of Reference of this project.

As for the infrastructure required for virtual operation, it was decided to have a robust ICT system with services such as web creation, support and hosting included. The virtual structure was considered fundamental for a physical-structured centre, but this study gives the possibility of making alternative cost simulations for having either a virtual or a physical centre, or preferably both, by modulating the size of expenses according to the need of remunerated managers, employees and rental of property. In addition, based on the practices of the associations studied, a list of possibilities to obtain revenues was suggested.

In the context of the study, 419 organisations were identified as key stakeholders, including 86 associations, 175 companies, 117 research and development units and 41 governmental agencies. Out of the total, 49% are regionally concentrated in the Southeast region, mainly in São Paulo and Rio de Janeiro, which together account for 40% of the national total. The Northeast, the South, the Midwest and the North respectively corresponds to 21%, 13%, 10% and 7%. For all 419 organisations, complete addresses, name of the executive, researcher and/or principal responsible, contact phones, home page, email address, and funding sources were retrieved when available, as well as date of foundation

and main activity. The full list of institutions is available in the Appendix. In addition to this broad assessment, we contacted 80 people from energy companies, associations, universities and governments, as described in the acknowledgements. We carried out interviews with all of them about the energy centre. However, we removed their identities in the document's main text for privacy reasons.

Interviews:

The survey shows that most of the interviewees consider the initiative as positive and welcoming because the centre could catalyse projects of greater relevance, by integrating and combining joint efforts. They also argued that there is a need for some coordination at national level, in order to avoid disconnected and overlapping actions. In addition to this common perception, there is also a large set of responses that point to other issues such as to improve resource allocation of R&D (Research and Development) funding, prepare studies, organise high-level meetings, promote synergies and interchange of expertise, and build a win-win relationship between the parties involved, as well as contributing towards a low carbon energy mix, including infrastructure and regulatory affairs.

There were also those who defended the idea of an independent centre from the government, given to the many discontinuities and interruptions of governmental initiatives in Brazil. In addition, while one of the interviewees compared previous initiatives of different international partners and highlighted that previous collaborations with the UK were unsuccessful, there were also participants who pointed out the well-known and successful cooperation between R&D institutions in Brazil and the UK as an excellent starting point.

It was suggested by some participants that among other roles, the centre could assist in the management of mandatory R&D levy from energy projects. Many contacts view the initiative as a way to promote international collaboration, cooperation among stakeholders (universities, companies, associations, governments) in the Brazilian energy sector, investments in renewable energy, training, dialogue, and discussion, in order to build critical thinking and planning for this sector. The centre could stimulate the creation of new initiatives apart from the traditional centres already supported by Brazilian agencies and governments. The emerging centres could be more interested in this proposal because the centre could work as a complementary initiative, with the possibility of making room for other centres and start-ups. It could encourage dialogue channels for the development of the energy sector in a broad way, as well as the possibility of articulating common objectives. This will create an cooperative environment promoting international collaboration.

In this context, there are concerns about how the funding resources from the UK would be applied in Brazil and how a British effort of this nature may potentially inhibit other European initiatives. An interviewee commented that if the goal is only to use Brazilian funds, this can be a disadvantage. For instance, will it bring funds from abroad or will it only use/reallocate the Brazilian resources already available (and scarce)? Another potential disadvantage is that this project may not necessarily be aligned with national interests and should avoid duplicity with roles played in current centres. Furthermore, some participants added additional potential disadvantages, such as the required capital costs, the long-term sustainability of the centre, and a potential competition with national institutions for funding resources.

When asked directly about possible barriers, some have shown scepticism, pointing to existing centres, concerns about their leadership role, legitimacy, and consolidation. One of the interviewees commented that the term 'coordination' may have a different connotation in Brazil and that an integration centre would sound more appropriate.

In relation to the interest and willingness of the participants, many participants, motivated by the idea of having such an energy centre, were interested in getting involved in person. Others clarified that an institutional position would require internal consultation for approval. In the case of governments, their participation would be executed in a collaborative way. Among the constraints, the sources of financing and the management model are the main highlights.

Regarding the possibility to help obtain sector funds (e.g. ANEEL and ANP) for the Energy Centre, the majority responded positively and advised that it could contribute towards the allocation of more resources for renewable energy and international cooperation. After pointing out the difficulty of some companies to object project funding approval, one of the interviewees recommended the possibility of strengthening the funds with the engagement of British companies in Brazil, which would benefit the centre.

Among potential roles and activities for the Energy Centre, support was suggested in project management, new technologies and initiatives such as high-performance biomass, bioenergy, efficiency increase, smart grids, distributed generation, transition of energy mix and its impacts, international exchange and regulation. One contact said the centre could act as a think-tank and have a strategic vision for technological development.

Indicative costs:

The study pointed to a need for investment, excluding property expenses, in the order of R\$ 153,000.00 (exchange rate in Dec 2018: R\$ 1.00 = £ 0.20). This includes purchases related to office furniture, kitchen equipment and appliances, information and communication technology equipment and decorative objects. The investment in property would depend on the decision of the location. For the three selected cities, Brasília, Rio de Janeiro and São Paulo, the average price per square meter for high-standard executive offices obtained by listing selected properties, is respectively approximately R\$ 11,050.00, R\$ 12,511.00 and R\$ 12,452.00.

The operational cost represents the expenses with personnel, property rental, contracted services, consumables, and travel. As a methodological approach, we worked with two models of operational costs: a low and a high estimate. In general, no significant difference was observed in relation to the assessed variables for the three locations studied, besides the salary of directors, in which the national average presented a value substantially lower than those of the three assessed cities. The personnel expenses represent the largest portion of the operational costs, approximately 85%. For the cities of São Paulo, Brasília and Rio de Janeiro, the operational costs for 'low estimate' were respectively R\$ 295,970.00, R\$ 299,934.00 and R\$ 296,918.00 a month, whereas the values for a 'high estimate' were R\$ 394,307.00, R\$ 398,271.82 and R\$ 395,255.00 a month.

Sumário Executivo

Este trabalho é resultado do Termo de Referência “Avaliação de Centros de Energia no Brasil” proposto pela Embaixada Britânica no Brasil através do Fundo Prosperidade do Reino Unido. O projeto teve objetivo avaliar os centros de energia existentes no Brasil e suas atividades, bem como a elaboração de um levantamento (*survey*) para obter informações sobre o interesse desses centros na criação de um centro de coordenação nacional (com localização física e/ou virtual) e estimar custos indicativos para operar o centro proposto. Esta pesquisa foi realizada de agosto de 2018 a dezembro de 2018, e seus resultados foram disponibilizados em janeiro de 2019. No que diz respeito à avaliação dos centros de energia no Brasil e suas atividades, buscou-se identificar os centros existentes, qualificando-os em relação à localização, suas principais atividades, dirigente principal, fonte de financiamento e área de atuação. Foram listadas diversas organizações, as quais metodologicamente foram agrupadas em:

- associações (incluindo sindicatos e organizações não governamentais);
- empresas de energia com influência nacional;
- institutos de pesquisa e desenvolvimento (centros, universidades, laboratórios, etc.); e
- órgãos governamentais (agências reguladoras e ministérios).

Com relação ao levantamento (*survey*) foram contatadas organizações através de entrevistas pessoais, por telefone e por meio de questionário respondido via internet. Assim, foi possível medir a sensibilidade ou o interesse das organizações para a constituição de um centro de energia, a percepção sobre vantagens, áreas prioritárias de atuação, modelo de atuação, vantagens e desvantagens, possíveis barreiras ou resistências.

Sobre os custos indicativos de funcionamento, trabalhou-se com um modelo conceitual estabelecido a partir da análise de centros existentes, o que oportunizou a elaboração de um conjunto de itens necessários ao pleno funcionamento e dimensionado mínimo de um porte que atendesse aos desafios que se desenha na proposta do Centro de Energia. Os itens de custo foram agrupados em investimentos (imóvel, móveis, tecnologia da informação e comunicação, mobiliário, equipamentos e eletros de cozinha) e custeio (pessoal, serviços contratados, material de consumo, viagens e deslocamentos). Considerada a distribuição do conjunto de organizações estudadas pelo território nacional, entre outros aspectos como hub aéreo, foram consideradas como localidades potenciais para sediar o Centro de Energia as cidades de Brasília, Rio de Janeiro e São Paulo, em consonância com os Termos de Referência do projeto.

No caso específico da estrutura necessária ao funcionamento virtual, optou-se por incluir uma estrutura robusta de TIC (Tecnologias da Informação e Comunicações) com serviços que incluam criação, suporte e hospedagem, os quais entendeu-se necessário para um Centro de Energia físico, de forma que se a opção for para um centro exclusivamente virtual, há a possibilidade de se modular o tamanho dos gastos de acordo com a existência ou não de dirigentes remunerados, de locação de imóvel e número de funcionários. Também, consubstanciado nas práticas das associações estudadas, elaborou-se uma lista de possibilidades de obtenção de receitas.

No contexto do assessment foram identificadas 419 organizações, sendo 86 associações, 175 empresas, 117 unidades de pesquisa e desenvolvimento e 41 órgãos governamentais. Do total 49% concentram-se regionalmente na região Sudeste com destaque para São Paulo e Rio de Janeiro, que juntas, em contribuições idênticas, correspondem à 40% do total nacional. O Nordeste corresponde a

21%, enquanto que o Sul possui 13%, o Centro-oeste 10% e o Norte 7%. Para todas as 419 organizações foram levantados endereços completos, nome do executivo, pesquisador e ou responsável principal, telefones de contato, webpage, email, fontes de financiamento, quando disponível, entidade vinculada, data de fundação e principal atividade dedicada. A lista completa das instituições encontra-se em apêndice. Adicionalmente a essa ampla lista, foram contatadas 80 pessoas (selecionadas do levantamento geral) de empresas de energia, associações, universidades e governos, conforme descrito nos agradecimentos, e realizadas entrevistas com todas elas sobre o centro de energia, preservando suas identidades no texto principal do documento por razões de privacidade.

Entrevistas:

No contexto da análise qualitativa do levantamento, pode-se depreender que a maioria dos entrevistados declaram a iniciativa como positiva e bem-vinda, argumentando a necessidade de certa coordenação, evitando ações desconexas, sobreposições, sendo agente catalisador de projetos de maior relevância, integrando e combinando esforços. Adicionalmente a essa percepção mais comum, há também um grande conjunto de respostas que apontam caminhos como: melhoria na alocação de recursos e no financiamento de P&D (Pesquisa e Desenvolvimento), produção de estudos e organização de reuniões de alto nível, promoção de sinergias e intercâmbio de pessoas, construção de relação ganha-ganha entre atores envolvidos, bem como a contribuição para a transição para uma matriz de baixo carbono, com olhar para a infraestrutura e regulação.

Houve também quem defendesse a desvinculação do governo, que na verdade corresponde a preocupação com constantes discontinuidades de iniciativas como essa que se apresenta. Ainda no campo dessa preocupação, um dos entrevistados compara iniciativas passadas de diferentes parceiros internacionais e aponta a descontinuidade ocorrida em parcerias anteriores. Por outro lado, há também entrevistados que destacaram a tradicional e bem-sucedida cooperação existentes entre instituições de P&D do Brasil e do Reino Unido como um excelente ponto de partida.

Foi sugerido por alguns participantes que o centro poderia ajudar na gestão do financiamento obrigatório da taxa de P&D advinda de projetos na área de energia. Muitos entrevistados veem a iniciativa como uma forma de promover a colaboração internacional, a cooperação entre agentes (universidades, empresas, associações, governo) neste setor, investimentos em energia renovável, treinamento, diálogo e discussão, a fim de construir um pensamento crítico e planejamento do setor energético brasileiro. O centro poderia estimular a criação de novas iniciativas fora dos centros tradicionais já apoiados por agências e governos brasileiros. Esses centros emergentes poderiam estar ainda mais interessados nessa proposta. Desta forma, o centro poderia funcionar como uma iniciativa complementar, com a possibilidade de abrir espaço para outros centros e startups.

Outro entrevistado argumentou que essa questão depende da fonte de financiamento desse centro: trará fundos do exterior ou apenas utilizará / realocará os recursos brasileiros já disponíveis (e escassos)? Este entrevistado também argumentou que, se o objetivo é apenas usar fundos brasileiros, isso pode ser uma desvantagem. Outra desvantagem potencial é que a iniciativa pode não estar necessariamente alinhada com os interesses nacionais. Deve também evitar duplicidade com papéis desempenhados nos centros atuais. Além disso, os entrevistados disseram que, entre as potenciais desvantagens, estão os custos de implementação e sua sustentabilidade, bem como a competição com instituições nacionais por recursos.

Já as vantagens vão do aprimoramento dos canais de diálogo ao desenvolvimento do setor de energia de forma ampla, bem como à possibilidade de articulação de objetivos comuns, criação de um ambiente de cooperação e de promoção a colaboração internacionais. Nesse contexto também há interrogações colocadas sobre como os recursos de origem britânica seriam aplicados no Brasil e como um esforço britânico dessa natureza pode inibir outras iniciativas europeias. Quando perguntados diretamente sobre possíveis barreiras, alguns demonstraram ceticismo, apontando centros já existentes, preocupações sobre seu papel de liderança, legitimidade e consolidação. Um dos entrevistados comentou que o termo “coordenação” talvez não seja o mais apropriado e que talvez o termo “integração” seria melhor. O financiamento também foi citado como uma possível barreira.

Em relação ao interesse e disposição em participar da iniciativa, resguardados os tramites internos, ou a inaplicabilidade em alguns casos, especialmente de governo, há grande aderência à ideia. Houve quem estivesse interessado em envolver-se pessoalmente. Entre os condicionantes, destaca-se as fontes de financiamento e o modelo de gestão. Sobre a possibilidade de o Centro de Energia ajudar na captação de fundos setoriais a maioria respondeu positivamente, inclusive ajudando atuar para que haja mais recursos para energias renováveis. Um dos entrevistados falou na possibilidade de fortalecimento dos fundos com o engajamento de empresas britânicas no Brasil e também houve quem apontasse a dificuldade de algumas empresas em aprovar projetos nos fundos de maneira que o Centro poderia ser de grande utilidade no processo.

Dentre as sugestões de funções potenciais e ou atividades para o Centro de Energia foram citados apoio no gerenciamento de projetos, novas tecnologias e iniciativas como biomassa de alto desempenho, bioenergia, aumento de eficiência, redes inteligentes (*smart-grids*), geração distribuída, energias renováveis, transição de matriz energética e seus impactos, intercâmbio internacional, regulação, entre outros. O centro poderia atuar como um *think-tank* e ter uma visão estratégica para o desenvolvimento tecnológico.

Custos indicativos:

O estudo apontou uma necessidade de investimento, excluído imóvel, da ordem de R\$ 153,000.00 (taxa de câmbio em Dez 2018: R\$ 1,00 = £ 0,20), que compreendem aquisições relativas a mobiliário, equipamentos e eletrodomésticos de cozinha, equipamentos de tecnologia da informação e comunicação e objetos de decoração. O investimento em imóvel dependerá da decisão sobre a localização, pois consideradas as cidades selecionadas Brasília, Rio de Janeiro e São Paulo, o valor médio do metro quadrado para escritórios executivos de alto padrão, obtido por cotação de imóveis selecionados, é respectivamente da ordem R\$ 11.050,00, R\$ 12.511,00 e R\$ 12.452,00.

O custeio corresponde aos gastos com pessoal, locação de imóvel, serviços contratados, material de consumo, viagens e deslocamentos. Como opção metodológica trabalhou-se com dois valores, um mínimo e um máximo, para as três localidades estudadas. No contexto geral dos custos, não foram constatadas diferenças significativas em relação aos custos avaliados, exceto ao salário dos cargos de dirigentes, onde a média nacional apresentou um valor substancialmente inferior aos praticados nas cidades estudadas. Como os gastos com pessoal representam a maior parcela do conjunto, aproximadamente 85%, preferiu-se apresentar um valor mínimo e um valor máximo possível para o conjunto de gastos de custeio. No total, no caso do valor mínimo para as cidades de São Paulo, Brasília e Rio de Janeiro obteve-se respectivamente os valores de R\$ 295.970,00, R\$ 299.934,00 e R\$ 296.918,00 por mês; enquanto que os valores máximos estimados foram R\$ 394.307,00, R\$ 398.271,82 e R\$ 395.255,00 por mês.

1. Introduction

Brazil is a global reference in renewable energies and has a vast experience in energy research, development and regulatory affairs. This long experience has been supported by a large number of energy institutions, with several players involved nationwide, such as universities, official laboratories, regulatory offices, research institutes and either public or private companies. However, there is no efficient and independent coordination among all of them at this date. A management system could avoid overlaps, find synergies and share information towards a sustainable energy future. This could be executed by creating a collaborative institution in the form of an energy centre. In harmony with its member institutions, this would facilitate the dialogue between governments, recommend policy regulations, and lead technology innovation systems and reference publications, whilst also fostering international partnerships.

As the United Kingdom and Brazil have a long history of partnerships in solving energy issues, contributing to the creation of this energy centre could deepen their relationship and benefit both parties. Thus, the British Embassy in Brazil commissioned an independent study via a public call for tenders supported by the UK Prosperity Fund in order to assess the interest and ambition of the Brazilian institutions to have an integrated energy centre and determine how useful this initiative is. This assessment would then help the UK take a decision to continue its intent to support the creation of this centre, along with collaborating with Brazil to achieve a sustainable low carbon transition, especially through funding support, the attraction of new investments and share of experiences. It is important to point out that the UK Prosperity Fund has an Energy Programme focused on helping developing nations to achieve a low carbon transition, full energy access and poverty reduction. This fund consists of Official Development Assistance (ODA) funds allocated under the International Development Act 2002, which is based on development that is likely to generate lasting benefits for the population of the country which is the case in this study. In other words, this energy centre initiative would have the potential to strengthen win-win collaborations between both nations with transboundary benefits.

1.1. Research context

Many references of successful Brazil-UK collaborations in energy could be cited. For example, the British Embassy recently supported the development of the Brazil 2050 Calculator, which is a tool aimed at informing the climate debate and energy planning. The Brazilian calculator is a spin-off of the UK 2050 Calculator and the Global Calculator¹, which were both led by the former UK Department of Energy and Climate Change (DECC), currently known as Department for Business, Energy & Industrial Strategy (BEIS). These calculators inspired several other nations to develop their own national calculators, including Brazil. Another example of partnership is the creation of the FAPESP-Shell Research Centre on Gas Innovation (RCGI) at the University of São Paulo (USP) a few years ago. The RCGI has Imperial College London as a key partner that began from a collaboration with the BG Group, the major owner of Comgás (São Paulo Gas Company) at that time. In addition, the UK has several business collaborations in the Brazilian energy sector. This includes investments in the production of biofuels by companies such as BP in the States of Goiás and Minas Gerais, in oil and gas, and in the

¹ The Global Calculator is available at: www.globalcalculator.org. For more information on the list of available national calculators, including both the UK and Brazil's versions, please access: www.2050.org.uk

engine manufacturing industry, with long-time collaborations with Rolls-Royce for the production of gas turbines.

Moreover, the UK has substantial experiences in energy research, technology innovation and regulatory schemes, which could also benefit Brazil and the development of the proposed energy centre. For example, the UK Energy Research Centre² (UKERC), which acts as the focal point for energy research in the UK and its international partners, could serve as a reference to consider for possible operational models for this energy centre in Brazil. The UKERC is funded by the Research Councils UK Energy Programme and has its main office at Imperial College London. This initiative has interactions with several universities working on energy across the UK, as well as with governmental institutions responsible for energy policies and regulation, such as the UK BEIS and the Office of Gas and Electricity Markets (Ofgem).

In contrast, the Brazilian energy sector has its own specificities. For example, the country has a much higher share of hydropower and bioenergy in its energy mix than most nations worldwide. The country also has a larger territory (5th largest, globally), with substantial availability of natural resources for energy generation, including high potentials for the expansion of onshore and offshore wind power, solar energy and the bioeconomy. In addition, the country still has large reserves of oil and gas, particularly in deep waters (pre-salt layer). However, in order to keep progressing in the coming decades, Brazil has to ensure the necessary investments in power generation and energy efficiency, whilst also reducing its total greenhouse gas emissions over time. The Brazilian GDP was approximately US\$ 2 trillion in 2017 and for each percentage of GDP growth, the country grew at a similar percentage in total energy consumption, which was around 260 Mtoe in the same year; i.e. there is an approximate 1:1 ratio for GDP growth vs. energy consumption growth, which can be slightly higher, depending on the assessed year. Therefore, a combined effort of governments (Federal, State and Municipal), companies (public or private) and research institutions, constantly communicating with the civil society, is fundamental to promote energy security and meet the necessary investments ahead.

Brazil's energy market is characterised by a mix of private and public investors, which may vary according to the type of business and Brazilian State. This is different to the UK system, which is almost entirely funded by private equities. For example, under the regulation of the Brazilian National Agency of Electrical Energy (ANEEL) and supervision of the National Operator of the Electrical System (ONS), the Brazilian electricity market may vary from state-controlled companies (e.g. Eletrobras, COPEL, CEMIG) to totally private schemes. Biofuels sector is mostly private and gas distribution companies can be private or public (most of them has mixed capital from private and public). The former state monopoly Petrobras is still market leader of the oil and gas in Brazil but several international players have been participating through public auctions regulated by the Brazilian National Agency of Petroleum, Natural Gas and Biofuels (ANP). Shell, Total, BP, Statoil, Repsol-Sinopec, Exxon Mobil, and the Chinese CNODC are some examples. Both ANP and ANEEL are regulatory autarchies (similar to Ofgem), related to the Brazilian Ministry of Mines and Energy (MME). Regarding natural gas distribution, there are several companies involved. The share of public and private capital depends on the regulatory scheme adopted at state level (several Brazilian States have their own regulatory agency). The National Council for Energy Policy (CNPE) advises Brazil's President in strategic energy policy decisions.

² See more about UKERC at: www.ukerc.ac.uk

In terms of 'energy centres', there are several universities, companies, laboratories and independent organisations with strong energy research programmes. Some academic references are: the Institute of Energy and Environment (IEE) at the University of São Paulo (USP); the Interdisciplinary Centre for Energy Planning (NIPE) at the University of Campinas (Unicamp); the Energy Planning Programme (PPE) of the Institute for Postgraduate Studies and Research in Engineering (COPPE) at the Federal University of Rio de Janeiro (UFRJ); and the Electrical Engineering Programme at the Federal University of Itajubá (UNIFEI); among other examples. There are also some collaborative schemes, such as the University Network for the Development of the Sugarcane Energy Sector (Ridesa), which involves many public universities across the country.

Several energy companies also have their own energy centres. For instance, Eletrobras has its Centre for Energy Research (CEPEL), which includes a Centre of Reference for Solar and Wind Energy (CRESESB). CHESF has a Centre of Reference in Solar Energy (CRESP) in Petrolina – Pernambuco (which also research solar, biomass and energy storage), and Petrobras has its Research Centre (CENPES) for R&D and basic engineering. In addition, there is a public company named Energy Research Company (EPE) dedicated to inform the Ministry of Mines and Energy on energy planning issues and publishes the ten-year energy expansion plan, the national energy balance and other official statistics. Some energy companies have joint research centres, such as the Sugarcane Technology Centre (CTC) which has many biofuel-producing companies as its shareholders. Brazil also has some official laboratories for energy technology, such as the Brazilian Bioethanol Science and Technology Lab (CTBE) and the Institute for Energy and Nuclear Research (IPEN).

There are also some non-for-profit organisations acting as energy centres. One successful example is the Lactec Institute, which is a civil society organisation of social interest (Oscip³), managed by Paraná Energy Company (COPEL), the Federal University of Paraná (UFPR), the Paraná Institute of Engineering (IEP), Paraná Commerce Association (ACP), and the Federation of Industries of the State of Paraná (FIEP). Lactec consists of several laboratories specialised in energy and environmental technology, which among many things were responsible for the development of Itaipu Dam and several other large hydropower plants. Another type of non-for-profit organisation is the Centre for Management and Strategic Studies (CGEE), which is a social organisation supervised by the Brazilian Ministry of Science, Technology, Innovations and Communications (MCTIC). The CGEE is qualified as a Social Organisation (OS⁴), and it has been working on energy, climate and technology innovation issues, among other subjects.

Furthermore, Brazil has several international agreements and memoranda of understanding on energy and many societies and associations acting on energy research, including energy policy, regulation and technology development. Some important references are the Brazilian Society of Energy Planning (SBPE) and the Brazilian Association for Energy Studies (AB3E) that is affiliated to the International Association for Energy Economics (IAEE).

Despite of all these existing energy centres and initiatives, there is a lack of coordination, particularly working on evidence-based policy, technological strategies and recommendation of novel regulatory

³ An OSCIP is a type of non-governmental organisation (NGO) which has an official recognition from the Brazilian Ministry of Justice, which concedes it a credential title for its relevant public interest.

⁴ An OS requires a formal recognition by the Presidency of the Republic in the form of a Presidential Decree. An OS needs to be supervised by a governmental body. In the case of CGEE, it is supervised by the MCTIC.

frameworks, which influences the essential investments towards a sustainable balance of different energy resources in the Brazilian energy mix. This also includes the role of bioeconomy, natural gas, sustainable transport, energy efficiency, renewable energies, connectivity and artificial intelligence applied to energy systems (e.g., smart grids, and internet of things). On the other hand, a coordination centre would only work with legitimacy if it is built as a bottom-up initiative, with stable funding support, transparency, and collective participation. Thus, this report presents an assessment about the pertinence and interest in creating an energy centre with this end, as well as some indicative costs for this establishment and operation, and long-term financial strategies for sustainability.

It is worth noting that an appropriate name for this centre would be discussed and decided afterwards by the Embassy and its partners. It may not be necessary called 'energy centre'. Some alternative names could be: alliance, network, house, forum, consortium, foundation, partnership, organisation or institute, among other possibilities. Ideally the name should work well in both languages (Portuguese and English) and avoid similarities with existing names of institutions and initiatives alike. The governance structure of this centre is the subject of another consultancy project commissioned by the British Embassy and, therefore, will not be directly assessed in this report.

In line with the scope of the UK Prosperity Fund, the UN Sustainable Development Goals (SDGs), and the climate negotiations under United Nations Framework Convention on Climate Change (UNFCCC), the British Embassy in Brazil suggests that this centre should cover the following areas: a) energy regulation, including gas market, decommissioning, environmental licensing process, competitive supply chain, biofuels and biogas from waste; and b) green energy technology, such as interconnectivity and integration of renewable energies into the main grid, biofuels and biogas from waste, smart grids and energy storage. This list of areas is not exhaustive, but provides some relevant areas for further investments towards a low carbon transition.

1.2. Objectives

The objective of this study is to assess the interest of existing energy centres in Brazil (e.g. companies, universities, associations and governments) to have an independent coordination centre for energy affairs nationwide, including potential international collaborations. In other words, the idea is to identify the main needs and challenges of the existing energy centres in order to recommend (or not) the creation of a coordination body. This could act, for example, as an integrative network, by working as an independent think-tank forum, whilst also avoiding duplicity and hierarchical conflicts with current initiatives nationwide.

In order to meet this main objective, the specific objectives of this study are to:

- Provide a broad list of key institutions working on energy in the country, including contact, activity and other information;
- Carry out a survey through a questionnaire and interviews with institutions of reference;
- Prepare some indicative costs to create and operate the proposed energy centre, as well as providing some suggestions for its financial sustainability in the long term.

2. Methodology

The present assessment was carried out through personal contacts and research in order to map the main existing centres nationwide and identify when possible, their main activities, location, structure, operation dates, foundation date and the people responsible for their foundation and their main funding sources. The assessment also included a survey conducted via interviews and questionnaires, as well as the preparation of indicative costs for the establishment and operating the energy centre. This entire project was developed from August 2018 to December 2018, and its results were made available in January 2019.

The list of existing institutions involved in the energy sector were categorised into the following groups:

- **Research and development institutions**, e.g. universities, labs and research institutes, including an assessment of the initiatives registered in the Brazilian CNPq database⁵;
- **Energy companies**, including both public and private companies;
- **Governmental bodies**, such as ministries and regulatory agencies;
- **Energy associations and other representative schemes**, including syndicates.

The full list of key institutions working on energy in Brazil identified by the authors are available in the Appendix. The list is also available in MS Excel, as a supplementary document to this report. The list is not exhaustive, but it covers the main players of the Brazilian energy sector.

2.1. Granularity criteria

Given the vast amount of companies and other institutions related to energy affairs in Brazil, there was a need of establishing granularity criteria, in order to limit the scope to institutions which will be in line with the objectives of this project. In the case of the governmental bodies, the focus was on key ministries, secretariats and regulatory agencies involved in energy issues at both Federal and State levels. No questionnaire was sent to governmental bodies, except when they requested it. Instead, the team organised in-person meetings with selected contacts. Companies were narrowed down by the relevance of their production or transmission capacity, and national influence. R&D institutions were defined by their availability in the CNPq database or other funding agencies' database, as well as by the relevance of the laboratory/centre at national level. Finally, the associations and other institutions (e.g. syndicates and energy fora) were limited to their level of representation and impact. Only the most relevant institutions in their respective areas, especially at national or macro-regional level were included.

In addition, an emphasis was given to institutions working on renewable energies (solar, bioelectricity, biofuels, hydroelectricity and wind power), natural gas and new energy technologies aimed at low carbon transitions. The team also looked for a proper regional balance at national level in terms of location when possible (e.g. Brazil's South, Southeast, Centre-West, Northeast or North Region). The

⁵ CNPq (*Conselho Nacional de Desenvolvimento Científico e Tecnológico*) is the Brazilian National Council for Scientific and Technological Development, which is dedicated to promote science, technology and innovation in the country. It is a governmental organisation, similar to a research foundation, and is linked to the Brazilian Ministry of Science, Technology, Innovation and Communications (MCTIC). The CNPq database includes data about both registered institutions and researchers' profile, see more at: <http://lattes.cnpq.br>

team's experience in energy affairs was also considered when selecting the institutions for the assessment.

2.2. Surveys

Following the granularity criteria assessment previously described, the most representative energy centres were identified and compiled in a list. As there were too many institutions to carry out interviews within the proposed timeframe of the project, the authors only ran surveys with representatives from the most relevant energy centres. In total, 80 people were contacted by the project's team and all of them were interviewed either in person or via questionnaires. The list of participants in the interviewees is available in the acknowledgements at the end of this report. However, their identities are not revealed in the discussions for privacy reasons. All interviewees were approached in advance by personal contact, telephone or email, in order to contextualise the project, clarify any issue beforehand, as well as preventing them from ignoring the request or delegating the responses to someone not really involved in energy technology and policy. This aimed to reduce the risks of misinformation from the questionnaire. The proposed questionnaire was also previously discussed and agreed with the British Embassy. The original questionnaire in Portuguese version is available in the Appendix. The questions were built to identify the interest of energy centres to be engaged in a central body, as well as their views, opinions, suggestions, and how the proposed centre could enhance their willingness to participate. All surveys followed the same structure in order to facilitate the compilation of answers afterwards.

Some surveys were carried out in person, similar to a semi-structured interview while others were implemented online. For the online survey, following contact with the participants, the authors sent them a link to the questionnaire available in *Google Docs*, using a specific email⁶ created for this purpose. Furthermore, the interviewees were always informed that the use of their responses and their opinions would be treated confidentially and anonymously in order to protect their identities. This follows the Chatham House Rule⁷, which states that "When a meeting, or part thereof, is held under the Chatham House Rule, participants are free to use the information received, but neither the identity nor the affiliation of the speaker(s), nor that of any other participant, may be revealed". Thus, although this report acknowledges a list of the contacts made along the project, the discussions do not reveal neither their identities nor their institutions in the analysis.

2.3. Indicative costs for the energy centre

The project's team assessed indicative costs of implementing the proposed energy centre with a physical and virtual location. This assessment was prepared based on approximate costs, taking in consideration average market values for offices (for renting or selling), staff salary, the preparation and maintenance of a website, and other average capital and operational costs. The costs were estimated via online consultation on websites specialised in property, furniture, and web-design. In addition to online consultation, the team also looked for few existing centres which may serve as references for cost estimates. They also contacted an independent accountancy office to have their expertise and suggestions.

⁶ The email used for sending the questionnaires was: brazilenergycentre@gmail.com

⁷ The Chatham House Rule is also available at: <https://www.chathamhouse.org/chatham-house-rule>

3. Assessment of existing energy centres

To date, 419 relevant players (here considered as “energy centres”) were identified in the context of this project, including associations, companies, R&D institutions, and governmental bodies (Figure 1). These players are spread all over the Brazilian territory, but they are mostly concentrated in Southeast Region (SE), followed by Midwest (CO), South (S), North (N) and Northeast (NE), as shown in Figure 2.

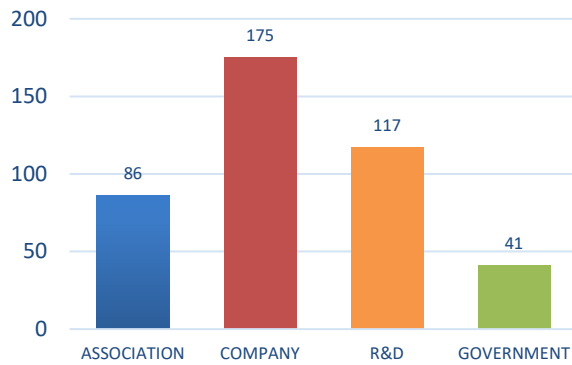


Figure 1: Identified energy centres per group category

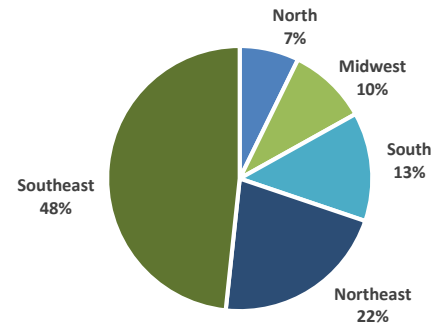


Figure 2: Identified energy centres per Brazil's Region

In terms of associations, 86 relevant institutions were noted and grouped as follow: petroleum and natural gas, electricity, ethanol, biodiesel, solar energy and wind power (Figure 3). In the case of companies, 175 institutions were identified from oil and gas and the electricity industry (Figure 4), being 7 selected for in-person meetings and 10 for online questionnaires. Companies working mainly on wind, solar and biofuels have been indirectly assessed via their respective associations.

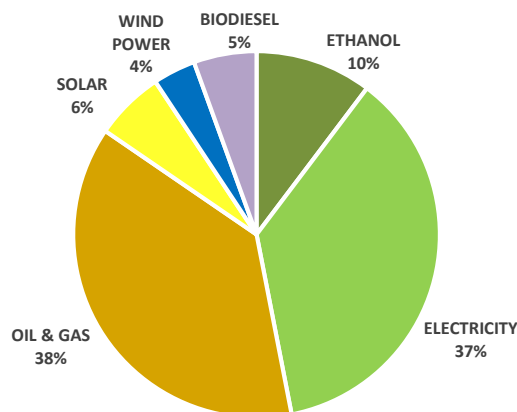


Figure 3: Share of association categories identified in the assessment

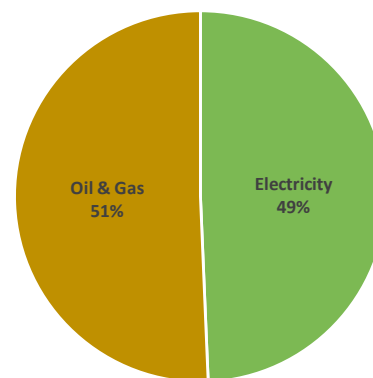


Figure 4: Share of energy companies identified in the assessment

In terms of key energy research areas that have been covered by this project, Table 1 shows an illustrative categorisation used by the Stanford Precourt Institute for Energy. Research areas highlighted in bold are the ones considered as priority areas for this project in line with the suggestions provided by the British Embassy. Water systems were also here selected due to its relevance for energy-efficiency technologies (steam cycles, cooling, etc.). The remaining areas are also important in a broader context for the energy centre project.

Table 1: Categorisation for energy R&D institutions in Brazil

RENEWABLE ENERGY	ENERGY STORAGE & GRID MODERNIZATION	POLICY & ECONOMICS	END-USE / EFFICIENCY	FOSSIL & NUCLEAR ENERGY	ENVIRONMENTAL IMPACTS
<ul style="list-style-type: none"> - Bioenergy - Geothermal - Photovoltaics - Renewable fuels - Solar Thermal - Wind 	<ul style="list-style-type: none"> - Batteries & Fuel Cells - Electric Grid - Grid Scale Storage - Superconductors 	<ul style="list-style-type: none"> - Economic develop. & Equity - Energy Markets - Finance & Subsidies - Management & Innovation - National Security - Public Opinion - Tax & Regulation 	<ul style="list-style-type: none"> - Buildings - Energy & Behaviour - Green Computing - Sensors & Data - Thermo-electrics - Transportation - Water Systems 	<ul style="list-style-type: none"> - CO₂ Capture, Storage & Conversion - Combustion - Enhanced Oil Recovery - Natural Gas - Nuclear - Unconventional Oil & Gas 	<ul style="list-style-type: none"> - Air Quality - Climate - Integrated modelling - Land Use - Water

Source: Stanford University (2018)⁸

There were identified 117 R&D centres by the project’s team. For the present work, the R&D areas were assembled in the following categories:

- Fuel production: this area involves research on fuels as a whole, including biofuels from agricultural phase to industrial phase.
- Energy efficiency: includes all research centres that work on energy efficiency strategy, plan and evaluation for different sectors (commercial, industrial and residential, energy equipment and process).
- Management and planning: focused on planning and management of energy at a city, state, country and global level. Energy economics is also included in this area.
- Energy generation: different energy sources for power generation, such as hydro, solar, wind, biomass, among others, are included in the research area. Each energy source has different types of technologies for electricity generation, which result in different environmental, social and economic impacts.
- Distributed generation: this area addresses the paradigm of changing from large concentrated generation to small distributed generation. Issues related to small scale power system are researched in this area.
- Materials: this area works with materials applied for energy production, distribution and consumption.
- Technology: including specific technologies for energy systems interface and energy consumption. For instance, power electronics and technology related to smart grid are included in this area.

The set of four charts shown in Figure 5 shows the distribution per region of existing R&D centres working on energy issues in Brazil (mostly identified from the CNPq database), per research areas, and the distribution of population and Gross Domestic Product (GDP) per region, respectively.

⁸ See more at: <https://energy.stanford.edu/research/research-areas>

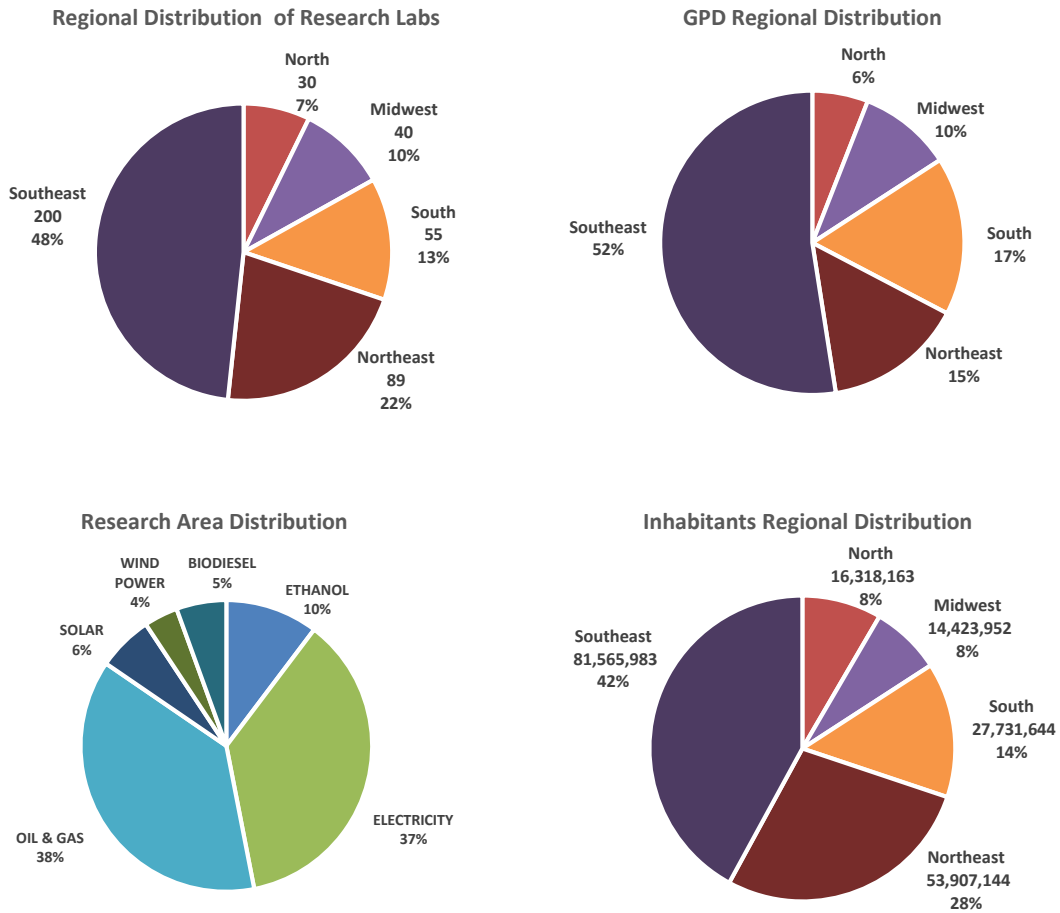


Figure 5: Graphs on research labs distribution (total number and share), GDG per Brazil's regions, research categories, and inhabitants per region (total population and share).

These results show that there is an uneven distribution of energy centres across Brazil. Most of them are located in the Southeast Region, comprised of the States of São Paulo, Rio de Janeiro, Minas Gerais and Espírito Santo. At the same time, this region concentrates nearly half of the Brazilian population (currently about 208 million) and GDP (approximately US\$ 1.9 trillion, nominal for 2018), as shown in Figure 6. This suggests a correlation among these three variables (population, GDP, and number of energy research centres) but, some inconsistencies remain, indicating a possibility of lack of coordination for the investments and historical discrepancies in regional development. The distinction is more noted in the Midwest region. On the other hand, the quantitative distribution of centres does not necessarily mean that their influences are also equally distributed, given that some centres are much more advanced, structured and equipped than others.

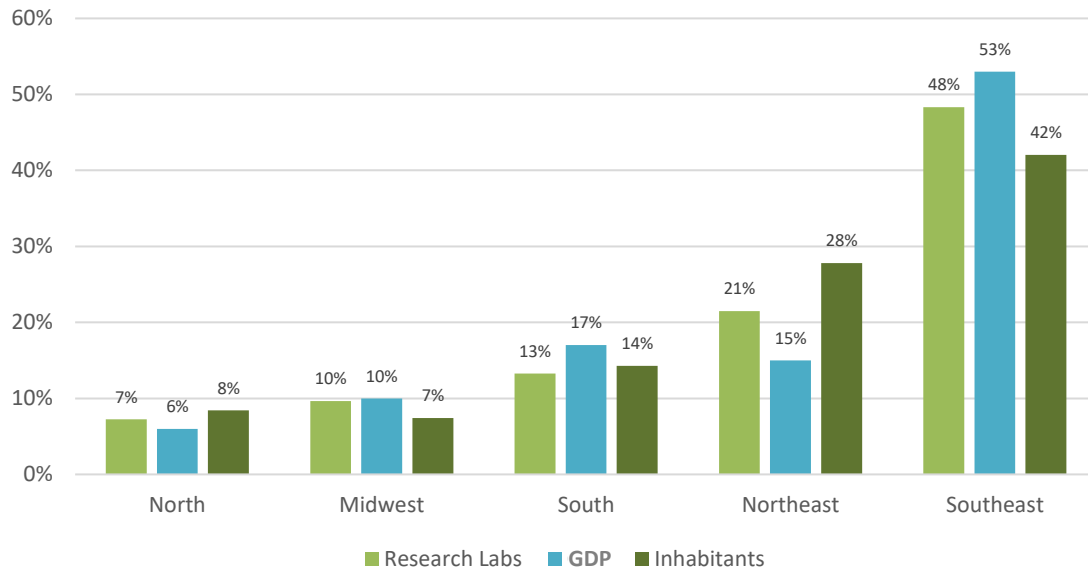


Figure 6: Inhabitants, GDP, and proportion of energy labs per Brazil's Region

Regarding the proportion of answers from R&D institutions to the survey, Figure 7 shows the regional distribution of the stakeholders involved.

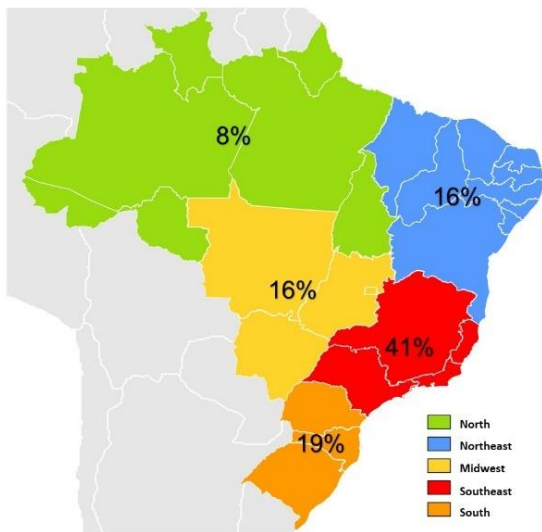


Figure 7: Distribution of research labs interviewed for this project.

4. Insights from the surveys

The interviews were carried out with a representative sample from the broad list of institutions assessed by the granularity criteria previously described. The following sub-sections present the results obtained from the interviews, either by in-person meetings or via the online questionnaire. In total 80 people were interviewed, as shown in the acknowledgements. As agreed with the interviewees, neither of their identities nor their respective institutions are described here in the discussion in order to protect their privacy (Chatham House Rules).

QUESTION 1: The British Government is considering to create initiatives (or an institution) in Brazil for articulating with Brazilian institutions and companies in the Energy Sector, aiming at working on projects in the areas of research and development (R&D) and regulation. How do you see this initiative? In your opinion, how should the format of this institution be? In which areas, more specifically, should it work?

Most of the interviewees considered that a coordination centre would be relevant and welcomed. The existing energy centres in Brazil are often disconnected from each other. Overlaps in research and development initiatives commonly occur. While some levels of competition and overlaps may be positive in some areas, they do not seem to be part of a strategic thinking but look more like a random situation. Therefore, the energy centre could act as a hub to help interlink the existing centres, catalysing larger projects by combining efforts towards a common end. Some contacts see the proposed energy centre as an opportunity to improve the allocation of funding resources and to facilitate the approval of additional funding for energy R&D, which includes international partnerships and multinational companies. It was also considered by some stakeholders that the centre could act as a financial hub for projects, charging an overhead for its maintenance, whilst also acting as an influential think-tank in the energy sector, producing executive publications and organising high-level meetings. Many participants mentioned that the centre should avoid to duplicate themes with existing centres. More specific comments are described in the following paragraphs.

A speaker said that the idea is good, but the centre should not be linked to the government, because governments change over time, often causing discontinuities, whereas the centre should carry out its activities through (and beyond) temporary mandates.

Another participant said that it is important to check if this initiative is not too similar to other initiatives. It is common to see foreign proponents in Brazil who come along, start a project and then abandon it, frustrating the initial expectations with the local partner institution. The speaker argued that their particular experience with British (and Portuguese) institutions did not last for long (some were just initial contacts, but full of expectations), while their collaboration with German and French institutions were more effective and sustainable. This speaker also suggested that the proposed centre should have an executive board with experienced people in the energy sector in order to create legitimacy. Other participant suggested that it is important to have new leadership to prevent creating a centre from old habits, hubris and rivalries.

An interviewee considered that promoting synergies between Brazilian and international agents (including the International Energy Agency) would be positive, and claimed that no institution is currently working on this idea of broad independent centre in Brazil. According to this participant, there is an opportunity for partnership between those who are looking for win-win interchange. The

same participant stated that it is important to start gradually, focusing on tangible results. Some examples of analogous models were the CGEE, FAPESP initiatives, and the three centres recently created by Vale S.A., which are focused on energy and environmental perspectives. CHESF also has a similar research centre in solar energy in Petrolina - PE. The centre should promote ad-hoc studies with continuity and permanence. It should be flexible and with little staff, but include consulting committees and annual-target planning. It should work as a space for new ideas, with mission, an advisory and fiscal board.

Another speaker commented that there are already some government-related institutions (e.g. agencies, and CGEE) trying to improve coordination, but due to political and legal complexity, this mission seems almost impossible to accomplish. Therefore, this participant considered that a non-governmental initiative would be ideal. It should give support to the Brazilian energy development, emphasizing on social inclusion and environmental conservation, as well as on developing the economy and creating jobs, while also avoiding an ultra-nationalist view. The centre must have a clear focus and should involve both ad-hoc staff and freelancers.

Some interviewees from companies and associations suggested the centre should work in line with business market trends (e.g., electric mobility, micro grids, telecommunications, storage, regulation, etc.), renewable energies, new technologies and productive arrangements for the energy sector. A specific stakeholder mentioned that the initiative should be led by Brazilian people and entities, even though a foreign collaboration is welcomed.

It was also mentioned that the initiative could contribute for the low carbon transition of the Brazilian energy mix, including in the regulation and infrastructure areas. It could also establish a permanent dialogue with governments and other stakeholders. Basically, having a good working plan is fundamental. The initiative was considered important to bring together different institutions and to create agendas of common interest in priority areas. However, it should not directly interfere on research, which should be a bottom up activity with freedom. A speaker argued that it would be risky to allow the centre to deploy tailor-made reports (like a consultancy firm) commissioned by lobby institutions or governments (including foreign governments). This applies to critical areas for international trade, because it may end up compromising its credibility and endorsing wrong stereotypes. On the other hand, the centre could stimulate some key areas of research and projects more broadly, without manipulating them.

A participant suggested that the initiative could be a joint-venture between a Brazilian corporation and a Society of Specific Purpose (SPE), which is a type of business organisational model for collective entrepreneurship. The participant also suggested that SPE could be registered in Brazil and belong to the British Government. However, most interviewees suggested that the centre should be as independent as possible, i.e. without a link to a specific corporation, which would end up controlling its activities for its own interest.

Another interviewee considered the initiative very pertinent, given that the UK is pioneer in institutional and regulatory reforms and so an important international reference for Brazil. In addition, the UK has many important research centres in energy. Although the petroleum and electricity sectors in Brazil have a substantial availability of R&D funding, there is a scattered administration and little critical analysis. According to this participant, there is a lack of coordination in choosing projects based on risk-return analysis. There should be a consensus on the main issues related to energy formed by a constructive dialogue with companies, governments and universities. The format of this proposed

energy centre could be similar to (with some reservations) Electric Power Research Institute (EPRI). Moreover, this centre should have a high-level council with members from the main research institutes, companies, and research foundations, including a professional executive directorate which should be able to assist projects based on risk-return parameters and international technological trends. Moreover, the centre should enable cooperation between institutional networks based on a set of defined priorities, as well as be accountable of the results in the most transparent way. For this interviewee, the main energy areas should be: technology, regulation, planning, and management.

A speaker pointed out that there is a long history of successful collaborations with British universities, arguing that the centre should be an executive office with administrative support. In this participant's views, researchers could be allocated at the University of Sao Paulo, similar to their partnerships with Institut Pasteur and Université Sorbonne. Some possible areas of interest are oil and gas, aeronautics engineering, biotechnology, nanotechnology, among others. In a similar fashion, another speaker said that this centre could use the structure of an existing university with a Scientific and Technological Institution (ICT) and aggregate a group of specialists with experience in international exchange, regulation or natural gas, and work on collaboration projects. However, some interviewees suggested that the centre should not be located within a single company or university in order to be an independent centre and represent the interest of other partners, including those located in different Brazilian states.

A speaker commented that the centre should focus on energy perspectives in Brazil and worldwide, and work as a centre of intelligence and strategic thinking, whilst also filling the coordination gap among existing institutions. In addition, the centre could boost energy partnerships between Brazil and the UK.

In the opinion of an energy expert, this initiative would be very positive, given that the UK is the most advanced nation in regulation of the electricity sector and, therefore, Brazil could learn from the UK and improve its own models. This includes helping enhance the role of Brazil's clean energy resources, such as hydropower and bioethanol. Another person said that Brazil needs to advance in strategic thinking, along with the formation of critical mass in energy technology subjects. The culture of a more structured research aimed at meeting the demands of the energy sector is relatively recent in Brazil. It started approximately 20 years only, following the Federal Law 9.991/2000. Therefore, learning from international experiences, such as those from the UK, could be very useful.

According to a senior expert in energy, the initiative may be positive, but there are already too many centres in Brazil. To create another one, it must have sufficient funding and legitimacy, whilst also being innovative and not only recycling ideas. For this expert, it would be interesting to map the existing energy consultancy companies, given that part of them survives with R&D funds. It was also suggested that the format of this centre could be similar to the World Resource Institute (WRI), besides its focus on environmental affairs. This centre should be known for its non-biased analysis, and should work on technology analysis rather than on technology production. In addition, it should focus on areas that have not been properly covered in Brazil yet. For example, regulatory issues have been quite well covered by UFRJ and other Brazilian universities, but some energy areas have not been properly addressed yet, such as short-term environmental impacts (that are different from climate change), or conflicts caused by energy production (e.g., large hydropower projects in the Amazon, and the case of nuclear energy, particularly Angra 3). To be legitimate, this centre must have leadership recognised in the area, be independent, and find ways to communicate. Another representative mentioned there

are more than 20 entities of representation in the electricity sector. Therefore, having a space of dialogue to find some consensus in the sector would be useful to improve the market and identify priorities.

It was also recommended that the centre could be either connected to a Brazilian respected institution (such as IBDE) or it could be a research institute itself. Also investing further on comparative energy law between Brazil and UK could help both countries to adjust regulatory issues and promote new investments from the UK to Brazil and vice-versa. Similarly, a participant considered that the centre could be linked to universities because they have interdisciplinary knowledge and are more exempt of lobby interests (compared to associations for example). Key areas would be biogas, biomethane, renewables in general and regulatory issues for the application of oil and gas royalties.

A participant suggested that it would be good to have a cooperation initiative formalised between Brazil-UK governments, in particular because there is a substantial participation of public companies in the energy sector. In terms of area, hydropower sector is already very well developed in Brazil. Therefore, new renewables such as wind and biomass should be focused, as well as new ways of collaborative schemes (*arranjos produtivos*) in the energy sector. A speaker stressed that the initiative should be aligned with ANEEL and the technology nationalised.

For a stakeholder, this centre could have a simple structure, with a directorate and a council of experts in projects, which would be responsible for proposing, receiving and analysing initiatives related to strategic areas for development. In order to define areas of priority, it would be necessary to know the magnitude of the budget potentially available.

According to a representative of a major electricity company, the centre could start as a forum to listen people and then keep advancing in other initiatives over time. The centre could contribute to shed light on new issues related to the distributed generation and the tariffs for the use of the distribution system (TUSD), which may be helpful to ANEEL too.

There is already a lot of expertise available in the Brazilian universities and, thus, this centre could be engaged with them, whilst also helping them with the British experience and potential funding support. A speaker suggested to create a centre of research and development, focused on wind power, energy storage, hybrid power systems and climate studies, as a joint-initiative with several universities. Furthermore, the centre could act as a network, having a dynamic record of all R&D institutions operating in Brazil, including their main past and ongoing research, as well as the research foundations and companies interested in this initiative. It could also carry out events to promote and enhance this network. Target areas should be renewable energies, energy storage and transport mobility.

QUESTION 2: What would be the main advantages and disadvantages of creating this energy centre?

While most of the participants only found advantages, few people identified potential disadvantages. It was suggested by some participants that the centre could help allocate the mandatory funding from the R&D levy. Many interviewees see the initiative as a way to promote international collaboration, cooperation among agents (universities, companies, associations, government) from this sector, investments in renewable energies, training, dialogue and discussion in order to build a critical thinking and planning for the Brazilian energy sector. A contact said that the centre may stimulate the creation of new initiatives outside the mainstream centres, already supported by Brazilian agencies and governments. These new centres may be more interested in this proposal as it could work as a complementary initiative, with the possibility to open space for other centres and start-ups.

A participant argued that the answer to this question would depend on the type of funding source: will the centre bring funds from abroad or just use/reallocate the already available (and scarce) Brazilian funds? This speaker commented that, if it is just aimed at using Brazilian funds, then it may be a disadvantage. Another potential disadvantage is that the initiative may not be necessarily aligned with national interests. It should also avoid duplicating roles played by existing centres. Some other interviewees said that a disadvantage may be the implementation costs and its long-term financial sustainability, as well as the competition with other Brazilian institutions over funding resources.

According to a participant, some important points of success would be to have a clear focus and avoid the potential overlap with other institutions. Many advantages could be envisioned by enhancing the dialogue channels that could contribute with the development of the energy sector. One said: articulation towards a common goal.

A speaker mentioned that this project could create a cooperating environment for the different institutions, but it might be challenging to have staff and funding to sustain this initiative. Also important is to avoid surcharging with activities and demands the existing institutions, given that they already have their own priorities and internal commitments.

A speaker said that the main advantage would be to help organise and improve the efficiency of the resource allocation, and that there would be no disadvantage. Another person commented that an advantage for this centre would be to become associated with energy development profiles in Brazil. This project could possibly enhance synergies, but the bureaucracy could be challenging.

Having a non-biased stand in the energy debate was also mentioned as an advantage. A speaker commented as potential disadvantages that the centre may get the valuable working time from some experts, who could be working on other priority activities. However, in the view of another speaker, it is difficult to think about any disadvantage, because the German Government for example has been investing in energy collaborations with Brazil for many years and only positive alliances has been seen so far.

An interviewee mentioned to promoting further international collaborations, and critical thinking as an advantage; but the costs involved and potential competition with national institutions over funding sources could be a disadvantage. Some other advantages mentioned were that the centre could be proactive for both countries, and promote international exchange. Furthermore, this initiative could bring the agenda of energy policy to the universities and civil society, instead of leaving it with the Parliament and Government alone.

A disadvantage would be the risk of duplicating efforts of already existing structures in Brazil. For an expert, the only advantage is the possibility of being an exempted centre (non-biased). It would be important to understand what the British could bring to Brazil, too, and not only what the Brazilian government could offer. For example, the UK could bring technology and new concepts.

The main benefit is to facilitate the investment of British companies in Brazil, but the centre should be open to European initiatives more broadly. The centre could help find the best techno-economic options for critical issues in the energy sector. It may help find consensus about the activities to develop the energy market. Despite Brazil already having many centres of expertise, there is no centre that could congregate several institutions as a whole, and that may be a big distinction. Another benefit would be to put together experienced people to discuss ways to improve the rules for energy

generation, whereas a disadvantage would be to create too many expectations and then see the initiative being neglected over time.

QUESTION 3: Do you foresee any barrier or resistance to set up this type of centre?

Some contacts viewed the initiative with scepticism, saying that there are too many “energy centres” already in Brazil and that the creation of another centre would possibly be of little interest. Some also raised concerns about its leadership role, legitimacy and consolidation. For example, some existing centres are quite influential nationwide (e.g. CENPES, CEPTEL) because they are supported by (or are part of) major companies, or due to their official credentials, such as the Energy Research Company (EPE) which is part of the Brazilian Ministry of Mines and Energy (MME). The influence may also occur when an institution has availability of sufficient funds to support its partner institutions too (e.g. via projects), or when it provides valuable differentiated services to its members. Otherwise, some contacts considered that there would be a risk of starting a centre that may end up resembling to the existing ones, which would possibly collapse over time.

Two participants emphasised that it would not be appropriate for the centre to carry out research on sensitive issues demanded by foreign governments. One of the participants commented that the term ‘coordination’ may have a different connotation in Brazil and cause rejection from some potential partners. The term integration may be more appropriate. Academic hubris was also highlighted as a potential issue. Another speaker commented about some previous unsuccessful collaborations with British institutions and said that if the centre does not collaborate effectively, then it would be difficult to implement.

In addition, a contact suggested that the German GIZ may have a similar role and that it might be good to connect with their representatives to find synergies and avoid overlaps, although they may wish to leverage German business as a priority (including technology trade). In addition, it would be important to clarify the UK economic interests involved in this initiative right from the beginning in order to avoid any future problems and resistance. A centre with bilingual staff - Portuguese-English fluency - could help in this regard.

According to an interviewee, the centre’s name is also key, because it can either enhance or damage the initiative. The centre should be firstly conceived and the name could be decided afterwards. This interviewee provided name suggestions such as, “Brazilian Development Funding Agency for Energy,” “Energy Development Institute,” or “Centre for Energy Studies.”. This speaker also had other questions like “Will it act as a funding agency?” “Will it develop R&D?” If it is supposed to act like an agency, it must have a director, coordinator, legal support, controlling mechanisms, etc., but the speaker also noted that this would depend on the funding available and the lifetime of this project (e.g. 5 years, 10 years or a permanent initiative). In addition, this participant recommended that this energy centre initiative should be presented to the federal government, the Brazilian Council of Rectors, the Council of State Secretaries, and the Council of the Presidents of FAPs (Research Supporting Foundations) among other stakeholders.

A participant highlighted the need to consider how this centre would be positioned in the ‘Brazilian Society’. In order to avoid resistance, it is important to have an initiative that is not controlled from abroad, and that Brazil has a direct involvement in its creation process, for sovereign and legitimacy issues. The way to present this centre was also considered important by this participant in order to avoid resistance, including potential xenophobia and misunderstandings that the proposal may be

against national interests. Moreover, it was suggested that there may be some legal barriers to use Brazilian funding for the centre (if applicable). Another potential barrier is a commercial competition between Brazilian companies and international stakeholders.

In the opinion of one of the stakeholders, the centre may be seen potentially rivalling with mainstream centres in Campinas, São Jose dos Campos and São Paulo. Therefore, a proper articulation was considered fundamental to reduce barriers and misperceptions. In contrast, another participant stated that there are no barriers, but challenges. It is important to work in a planned manner and with credibility to build and enhance the interlocutions. It is important to stay focus, although the different interests involved.

An interviewee commented that it may be difficult to obtain the necessary support from partner institutions to build this centre, given their different characteristics and potential conflicts of interests. Another person commented that it may be difficult to obtain funding in the first years due to the novelty of the proposed centre.

One of the resistances may be companies' bureaucracy. Some companies believe that the R&D funding belongs to them. Funding is perceived as a possible obstacle, depending on how the centre is going to be structured.

For a speaker, there may be a barrier in terms of location. For example, if the centre is located in Rio de Janeiro, there would be too many other existing actors influencing its activities (e.g. Petrobras, Eletrobras, ANP, UFRJ/COPPE), leaving potentially little space and role for the participation of other institutions across the country.

In order to avoid resistance, it was recommended that the centre should involve companies from the beginning and promote collaboration with Brazilian universities, which have many well-trained people currently available. However, for some State-owned companies, their participation in the centre would require passing through some internal bureaucratic procedures, which may not be very simple and may take a long time for approval.

For a stakeholder, the perception of duplicity may be a barrier and the centre must be independent. The potential barriers would depend on its operational structure. Communication is key for not creating a negative image, given that there may be some prejudice with the foreign investment in this project. Another person mentioned that to avoid barriers, the centre must be engaged with key agents in the energy sector. Different interests may bring difficulties to the centre, but at the same time the centre could help find solutions and reach some level of consensus. Others mentioned barriers such as the difficulty to retain technical staff, and a potential retaliation from other research centres.

QUESTION 4: Once created, would your institution be potentially interested in participating in this centre?

Most of the interviewees said that their institutions would be potentially interested in participating (somehow) in the energy centre. A participant mentioned that, from his extensive professional experience working on different areas of the energy sector, this type of initiative is definitely lacking in Brazil. One of the interviewees said that not only they would be interested in participating, but they would also want to be involved in its management activities.

In contrast, some contacts highlighted that the answer to this question would depend on the conditions involved (e.g., the centre's objectives, funding source and governance model). Other stakeholders said

that this question would require a formal institutional approval and therefore, they do not have the power to make that decision. In the case of governmental institutions (e.g. Ministries, and the Senate), this question was not applicable, but they were usually open to join and collaborate somehow (e.g. giving advices and guidance). Some interviewees say yes in terms of their personal opinions and interests, but also clarified that an institutional position would require a formal consultation with an objective proposal. A person commented that if the business group which owns their subsidiary company gives its authorisation, all its other subsidiary companies would possibly follow that decision, without having to get individual approvals.

In terms of a quantitative result, Figure 8 summarises the responses obtained for Question 4.

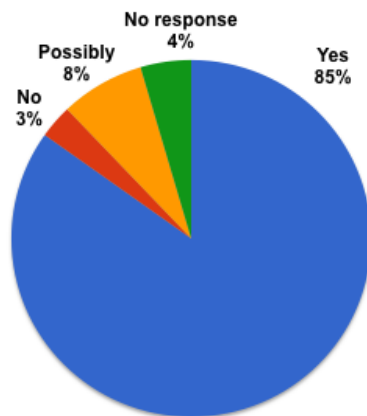


Figure 8: Once created, would your institutions be potentially interested in participating in this centre?

QUESTION 5: Has your entity had collaborations in energy issues with British institutions? If so, could you cite them?

Most of the institutions said that they do not have (nor recently had) direct collaborations with UK institutions, or at least not that they are aware of. However, other representatives mentioned some collaborations with Imperial College, the Universities of Hull, Nottingham, Surrey, Greenwich, Oxford, Dundee and Loughborough, and with some regulatory agencies and energy companies located in Britain, such as BG and Shell.

An interviewee mentioned that they have been approached by some UK institutions, but not with an objective proposal that was worth implementing it. Another interviewee said that yes, they did have some collaborations with the UK, but usually sporadic academic cooperation (e.g. Imperial College, and British NGOs in energy and environment). Positive interactions with the British Embassy were also mentioned by some participants.

Another stakeholder said that it is common to have contacts in seminars and in events but that they do not have a more well-established partnership yet. A speaker said that they do not have institutional collaborations but have purchased manufactured products from Britain. Figure 9 shows the quantitative results for Question 5.

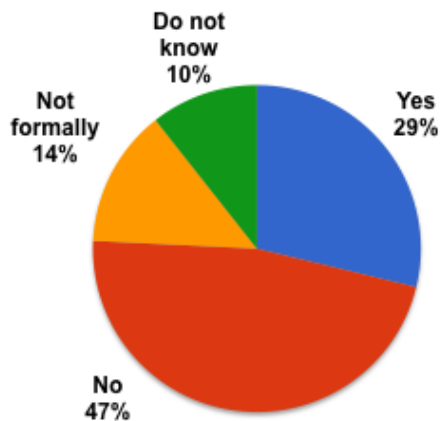


Figure 9: Has your entity had collaborations in energy issues with British institutions?

QUESTION 6: Do you think that this centre could help obtain funding from the sector funds (e.g. ANEEL and ANP) in order to carry out research and development activities?

Many interviewees highlighted the possibility that the centre could help obtain funding following ANEEL and ANP regulations for the 1% levy, as well as other agencies, considering their eligibility and rules. ‘Yes’ and ‘certainly yes’ were common answers. A speaker pondered that this would depend on the centre’s formal credential (e.g., if it will be a foundation, NGO, association, company, research institution, etc.), its partners and forms of negotiation. Another person said yes, but that the centre would have to have a CNPJ and necessary credentials with ANEEL and ANP.

An interviewee mentioned that this project would be one more institution to compete over funding, but it could also help build consortia among its associates and therefore contribute to positive interactions with R&D groups. Another stakeholder mentioned that even though ANP added recently biofuels in its agenda, the institution still remains too focused on petroleum. In addition, ANEEL stays focus on electricity generation from hydropower. Therefore, it would be useful for the proposed centre to communicate a more specific agenda on biofuels, such as fermentation, by-products, agricultural productivity and costs with universities, as well as CTC (Sugarcane Technological Centre), CTBE (Bioethanol Technology Laboratory) and other R&D centres.

A governmental expert suggested that there are other ways to get official funding support other than from ANP and ANEEL. For example, there may be funds available through CNPq, FINEP, CAPES and other institutions as well, or even international grants. Another stakeholder said that if the centre promotes the engagement of British companies in Brazil, the sectorial funds could be boosted, catalysing future projects through the centre and its partners. According to this participant, there is an existing example about a Portuguese company that does not involve their government.

It was also commented that the answer to this question would depend on the interest of the energy companies involved and their demands, since they are the original contributors to these funds. Per a regulation specialist, the concessionaires currently allocate their mandatory investments (levy) in institutions that meet their demands. Thus, if the centre is able to execute projects of their interests, it would possibly be eligible to use these regulatory agencies’ funds. Similarly, another expert explained that these funds are from the companies’ revenues and that they may be very interested in this type of initiative.

An interviewee pointed out that neither ANEEL nor ANP has ‘comparative energy law’ as one of the eligible areas to invest through the R&D fund so far. Another participant sees the potential use of ANEEL and ANP funds as something complementary, because they are already intensively disputed.

It was also mentioned that, in the case of R&D, many companies are not able to get their projects approved by ANEEL and the centre could help in the coordination of these processes. The centre could also guide researchers to get aligned with the interest of companies to carry out relevant research. Some interviewees did not know if that would be possible or not. Figure 10 shows a summary for Question 6.

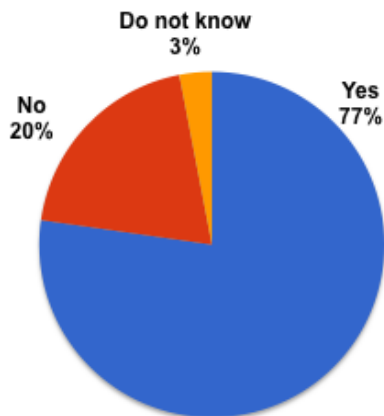


Figure 10: Do you think that this centre could help obtain funding from the sector funds (e.g. ANEEL and ANP) in order to carry out research and development activities?

QUESTION 7: Do you have any suggestion of potential roles or activities of interest for this coordination centre?

The centre could help in the interface and management of projects. A participant argued that there is no human activity that is not dependent on energy and that this centre could address issues related to important issues, such as manufacturing activities, quality of life (comfort), and communication. The centre should also look at where the energy sources are available, how to transform, deliver, control them and guarantee their quality.

Another important activity considered by some participants was bioenergy, including biofuels for transport and electricity, new technologies and initiatives such as high-performance biomass, biomass for the cement industry, and the Biofuture Platform supported by the IEA. In terms of ethanol fuels, a contact suggested that British companies could interact more with industries implemented in Brazil (specially in Curitiba and Belo Horizonte) in order to improve biofuel efficiency in vehicles (e.g. high-octane fuel). In addition, issues related to energy efficiency, specifically thermal processes (air conditioning, heating, central and district cooling, by concentrating cooling demand for shops and buildings) and embedded electronics were also considered relevant.

Moreover, an interviewee suggested ‘energy transfer’ as an important topic and, in that regard, the centre should vertically cover the areas of energy generation, distribution, commercialisation and consumption, including smart grids and energy efficiency. It should work horizontally at the same time, e.g. reducing wastes. The activities could be divided by sector, e.g. sanitation (energy as a vector for sanitation access), public policy (reduction of energy losses), among other possibilities. Distributed

energy via solar, wind, tidal energy, energy from sea currents (exploring the potential of the Brazilian coast, as known as the Blue Amazon), biogas, and organic waste were also recommended by some of the contacts as something relevant to be covered by the centre. A speaker pointed out that the activities must be in compliance with the Brazilian legislation for energy, environment and sanitation. A contact said the centre could be the bridge between the interested parties in the projects.

Another stakeholder commented that the centre could act as a think-tank and have a strategic view for technological development. Thus, the centre should have the quality and ability to articulate while maintaining credibility and national goals for the next years. In addition, the centre should remain attractive to oil companies and to what they become in the future. Besides that, many interviewees said that discussions on future regulatory frameworks and public policy would be very appreciated, considering the Brazilian energy sector needs, the role of renewable energy, and the new technologies expected for the coming years.

The centre should focus on the transition of the energy mix and its impacts, including international exchange of information and cooperation. It was also suggested that it should work on an agenda that could create a better environment for business decision-making, as well as to incentivise multi-institutional projects in areas of national interest and avoid dispersion and research overlaps.

An interviewee emphasised that the centre should create relationships among existing institutions in order to coordinate the selection of projects based on a previously established consensus according to risk-return parameters. It was mentioned by a representative from the private sector that alternative technologies, technology development, and knowledge protection should be considered by this centre. According to another interviewee, the oil and gas initiatives could be implemented in collaboration with the FAPESP-SHELL Research Centre on Gas Innovation (RCGI) at the University of São Paulo.

An interviewee highlighted that CGEE prepared a study⁹ about R&D in the energy sector, listing a large number of priority areas, which could be useful for discussing main activities of this centre. The relationship between energy and environmental impacts is a fundamental area, as well as technology development and policy innovation for renewable energies. An energy expert said that the centre could be useful to help improve the legislation, specifically in R&D towards a sustainable energy transition.

If this centre tries to coordinate efforts, it must communicate not only with the centres of reference in Brazil, but also in the UK. There are so many energy stakeholders in Brazil and hence much to be done to improve coordination.

A stakeholder suggested that important areas in the electricity transmission are operation efficiency, including maintenance, centres of operation and artificial intelligence. Other areas suggested are energy storage, electric grid for electric vehicles, as well as remote sensing, internet of things and entrepreneurship. Another speaker said that environmental licensing process for energy infrastructure is very critical. The current legal framework causes many uncertainties and insecurities for the projects, for almost all the parties involved, especially the licensing agent.

The centre should create and maintain an innovation network, whilst also organising periodic events and coordinating high-level working groups, as well as research.

⁹ Available at: <https://energia.cgee.org.br/home>

QUESTION 8: Is there any other comment that you may wish to make or that you may consider important to let us know?

Some interviewees stated that it would be fundamental to have a long-term strategy for the sustainability of this centre to guarantee a stable funding source, clear objectives, and avoid duplicity with existing centres. One of the participants said that a centre of coordination could certainly add value. At the same time, other participants mentioned that it is equally important to have a constructive relationship with other similar networks for collaboration purposes (rather than rivalling with them), such as the initiatives of IBP, the National Service for Industrial Training (SENAI - *Serviço Nacional de Aprendizagem Industrial*), the Brazilian Association of Chemical Industry (ABIQUIM – *Associação Brasileira de Indústria Química*) and the Brazilian Association of Wind Energy (ABEEOLICA – *Associação Brasileira de Energia Eólica*). Thus, the centre could give a significant contribution to the Brazilian energy sector, but its success would depend on its operational model, focus, and capacity of building external partnerships. Approaches that may be too similar to existing institutions may be seen negatively, such as provocative (in terms of power and influence) and redundant.

A representative considered that the centre could operate as a centre of intelligence aimed at proposing and discussing national strategies for the energy sector, particularly in R&D, regulation and low carbon transitions. This should be done in permanent communication with its member institutions and, potentially, with governmental partners such as the ANP and ANEEL. One of the participants emphasised that a good relationship with the government would be beneficial.

Two participants mentioned that the centre could contribute to improving the communication among the different actors involved in the energy sector, as well as receiving international delegations interested in building partnerships with Brazil. However, the Brazilian Government may not be able to support the centre financially.

The centre could also have a programme to promote gender equality in the energy sector, which is still dominated by men, particularly in leading positions. The centre could also have a gender quota for recruiting its own staff, and policies to ensure that the gender equality agenda is naturally included in its activities. It was also mentioned that the proposal of creating such an energy centre is a complex task. A lot of sensitivity in presenting the benefits of this centre will be required. The centre should also enhance the collaborations with civil society as well.

QUESTION 9: If necessary, would you allow us to contact you in the future in order to further discuss any specific issue?

All interviews confirmed their availability to remain in contact.

5. Indicative costs

This section provides some indicative costs for the creation and operation of the proposed energy centre. In order to suggest an accurate cost analysis for the energy centre, it is important to properly know its organisational and managerial structure. However, this information is not available yet, given that the definition of the governance strategy is still in process by the project supported by the British Embassy on 'Governance Assessment for an Energy Centre in Brazil'. Thus, the proposed indicative costs follow a more conceptual approach, which could guide the necessary parameters and variables for further cost estimates in greater detail in the future. It is proposed here that the centre would have a physical location and a web platform, but just a virtual centre is also an option.

The proposed indicative costs were based on two steps: the first step was to carry out a brief analysis of financial balances publicly available for some institutions of reference in order to have an idea of their basic structure, expenses and revenues; and the second step was a bottom-up assessment of indicative costs from market references. Two centres were identified as a comparative reference: Centre for Management and Strategic Studies (CGEE), and LACTEC Institute. This was useful for building an approximate conceptual cost model for the energy centre.

As already described in this report, CGEE is a Social Organisation linked to the Brazilian Ministry of Science, Technology, Innovations and Communications (MCTIC). Its main objective is to inform decision-making processes related to science, technology and innovation through prospective studies and strategic assessments carried out in collaboration with experts and institutions from the National System of Science, Technology and Innovation. It is comprised of an Administrative Council with 20 members, a Fiscal Council with 3 members, an Executive Directorate with 4 members, and technical staff comprised of 55 personnel (Dec 2017).

LACTEC is a non-for-profit private research centre, as already described, certified by the Ministry of Justice as an OSCIP, providing services and solutions in science, technology and innovation, especially in the areas of electricity, electronics, applied chemistry, hydraulics, hydrology, mechanics, vehicular emissions, civil structures, geotechnics, environment and information technology. It is comprised of an Administrative Council with 18 members, a Fiscal Council with 9 members, a Directorate with 5 members, and 378 direct staff.

Based on the structure of these two referential centres, the proposed assessment identified a number of cost categories (Table 2), which may be applicable for the proposed energy centre, as an approximate scheme.

Table 2: Key cost categories for the energy centre

Cost category	Description
Investment costs for the installations	<ul style="list-style-type: none">• Property purchase (if own office).• Office's pieces of furniture and equipment, incl. computers, desks, chairs, kitchen appliances, and pieces of decoration.• Website set up.
Office's operational services	<ul style="list-style-type: none">• External accountability and auditing services.• Office's physical maintenance, specially cleaning services.• Website maintenance.• Property taxes (e.g. IPTU, condominium).• Water and electricity fees.• Property rents (if rented).
Supporting materials and consumables	<ul style="list-style-type: none">• Materials for office (paper etc.), cleaning and kitchen products, etc.• Occasional catering services for special meetings.
Travel costs for staff or guests	<ul style="list-style-type: none">• Air tickets.• Terrestrial transport.• Hotel.• Food expenses.
Human resources	<ul style="list-style-type: none">• Staff salaries, e.g. director, managers, assistants and few other permanent or temporary staff, either fulltime or part-time.• Contractual costs and taxes (e.g. INSS).• Other HR expenses.
Events	<ul style="list-style-type: none">• Organisation of congress and workshops, which could be funded either entirely or partially by external sponsors.
Official taxes	<ul style="list-style-type: none">• Tributary taxes applied for operating the centre as a company, foundation or association, which may substantially vary according to the chosen model.

Organisational structure

Based on the business structure of LACTEC and CGEE, it is assumed here (as an indicative cost analysis) that the organisational structure of the energy centre would have an Administrative Council with 7 people, a Fiscal Council with 3 people, a Directorate with 3 personnel, 9 technical and supporting staff, and 1 trainee. This is an estimation, and the number of employees may vary. However, the proposed costs can be relatively easily adapted to meet different schemes.

Location

The centre could have a physical and/or virtual location. A virtual centre would require the development of a professional website, operational funding for meetings, events, development of collaborative studies and publications, as well as staff services to monitor messages, membership status, and to post news on Twitter, LinkedIn, Facebook, etc. The website could be bilingual (Portuguese and English) and have a restricted area for members through a safe login, among other features, such as a virtual space for project's demands and offers.

In contrast, a physical centre would require significant investments but may have substantial advantages against a totally virtual centre. A combination of both options would possibly be ideal. The physical centre could have space for executive meetings, receiving members and visitors, including coworking spaces for partners that may wish to stay at the office temporarily, as well as visiting

researchers from Brazil and abroad. Some members may see the initiative more seriously due to the fact that there is something concrete, with staff and professional infrastructure.

In terms of location, as requested by the Embassy, three cities were considered: São Paulo, Rio de Janeiro and Brasília. São Paulo and Rio de Janeiro concentrate headquarters and offices of several energy companies and leading universities in energy research, such as the USP and UFRJ. Rio also has the headquarters of EPE, ANP, Eletrobras and Petrobras. On the other hand, these institutions may (or may not) overshadow or dominate the new energy centre if nearby them and distant from Brasília, where the central government is located. Brasília has ANEEL, CNPE, CGEE, MME and other key Ministries working on energy issues, such as the Ministry of the Environment (MMA), Ministry of Science, Technology, Innovation and Communications (MCTIC), Ministry of Foreign Affairs (MRE, aka Itamaraty), Ministry of Agriculture, Livestock and Food Supply (MAPA), and Ministry of Finance (MF), as well as Embassies of 127 countries. Brasília may (or may not) be seen as a more balanced option by the centres located outside Sao Paulo and Rio de Janeiro cities, particularly by those in the Brazil's Midwest, North and Northeast Regions. Sao Paulo has the benefit of concentrating most of the Brazilian business and leading research institutions.

Investments

The capital costs involve the acquisition of information and communications technology (ICT) devices (e.g. computers, projector), furniture and kitchen appliances, which is estimated at approximately R\$ 143K, plus R\$ 10K for office's decorative pieces, hence R\$ 153K in total (about GBP 30K)¹⁰, without significant variations for the assessed locations. This value does not include building and staff costs.

Building

It was assumed that the office space would require approximate 100 to 200 m² in a region with high standard executive office buildings. It was also taken into account the aesthetic characteristics of the buildings and at least three parking spaces exclusively for the centre. To this end, housing websites were assessed. If the centre is latterly decided to be installed out of the assessed regions, the assessment may still be useful as a comparative indicator.

In total 36 office offers were assessed, out of which 20 were in Sao Paulo, 12 in Rio de Janeiro and 4 in Brasilia (Federal District). In Sao Paulo, the assessed districts were Pinheiros (including the boroughs of Pinheiros, Itaim Bibi and Jardim Paulista), Santo Amaro (Campo Belo e Brooklin boroughs) and Sé (Cerqueira César and Avenida Paulista areas). In Rio Janeiro the districts of Copacabana, Botafogo and Centro (city centre) were assessed, whereas in the Federal District only Plano Piloto region was considered, more specifically the Asa Sul borough. Table 3 summarises the main values obtained. The average value reflects the sample distribution, i.e. it is not a simple mean of the total variation.

¹⁰ Exchange rate (as on 19th Dec 2018): BRL 1.00 = GBP 0.20 (source: www.xe.com).

Table 3: Indicative costs for buying a professional office in selected cities of Brazil

City	R\$ / m ²		Office (200 m ²)
	Variation	Average	
Brasília	9,999.15 – 12,500.00	11,050.42	R\$ 2,210,084.00
São Paulo	8,000.00 – 26,593.75	12,511.77	R\$ 2,502,354.00
Rio de Janeiro	9,285.71 – 17,089.55	12,452.47	R\$ 2,490,494.58
Average	8,000.00 – 26,593.75	12,004.89	R\$ 2,400,977.53

The same analysis was made for renting an executive office (instead of acquisition), although in this case it would not be considered an “investment” expense, but an operational cost. The average values obtained from our market assessment are shown in Table 4. Prices for renting or buying may vary according to the city or borough. Comparatively, an assessment carried out by FipeZap¹¹ found out that the average price for renting commercial properties in São Paulo was R\$ 42.69 per m² and for Rio de Janeiro R\$ 40.14 per m², but these prices are for the entire cities, i.e. not only for well-located and developed areas, where most executive offices are situated. The same assessment also shows average values for acquiring commercial properties in Rio de Janeiro and São Paulo, respectively at R\$ 10,333.00 per m² and R\$ 9,938.00 per m² and, hence, given that these average prices were also for the entire cities, they are also relatively lower than those here estimated, although within the assessed range previously shown in Table 3.

Table 4: Indicative costs for renting a professional office in selected cities of Brazil

City	R\$ / m ²		Office (200 m ²)
	Variation	Average	
Brasília	76.61 – 110.26	92.86	R\$ 18,572.00
São Paulo	56.03 – 103.30	73.04	R\$ 14,608.00
Rio de Janeiro	60.00 – 120.00	77.78	R\$ 15,555.89
Average	56.03 – 120.00	81.23	R\$ 16,245.33

Figure 11 compares the results obtained for renting vs. buying an office space in the assessed regions, in terms of approximate average values for a 200 m² area. São Paulo and Rio de Janeiro have both similar costs for either renting or buying a property, whereas Brasília has shown slightly higher costs for renting and lower for buying. It is worth emphasising that these values are subject to substantial variations within these three assessed cities, depending on the borough, type of building and aesthetic pattern, among other variables.

¹¹ The FipeZap estimate is available at: <https://g1.globo.com/economia/noticia/2018/09/21/precos-medios-de-venda-e-aluguel-de-imizeis-comerciais-tem-nova-queda-em-agosto-diz-fipezap.ghtml>

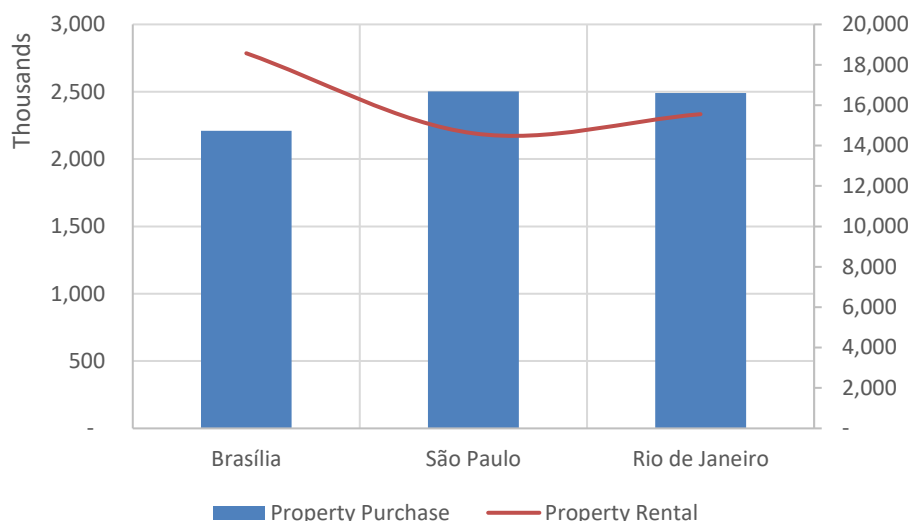


Figure 11: Buying (left) vs renting (right) an office space in different cities, in R\$ for a 200 m² private area.

Information Technology (IT) devices

In this assessment, it was considered an approximate number of devices required for an office space, considering average prices offered in the market, including landline and mobile telephone, computers (desktop and laptop), laser printers, and projector for video conferences (Table 5).

Table 5: IT costs, in Brazilian Real.

Item	Configuration	Quantity	Price per unit	Total
Desktop	PROCESSOR I5 - 7200U; WINDOWS 10; HD 1 T; RAM 8GB 2.400MHZ	10	R\$ 4,832.67	R\$ 48,326.67
Laptop	PROCESSOR I5 - 7200U; WINDOWS 10; HD 1 T; RAM 8GB	5	R\$ 2,792.33	R\$ 13,961.67
Mobile phone	SAMSUNG GALAXY NOTE 9 128GB	3	R\$ 3,697.74	R\$ 11,093.22
Mobile phone	MOTO G6 PLAY XT	2	R\$ 891.07	R\$ 1,782.13
Tablet	GALAXY TAB A 10.5" SM - T 595	3	R\$ 1,809.11	R\$ 5,427.33
Landline	Hybrid central, 5 smart terminals, 2 common terminals	1	R\$ 3,341.35	R\$ 3,341.35
Videoconference set	Digital camera 1080P - ZOOM 10X; Directional mic; Duplex viva-voce system; 14 people	1	R\$ 6,566.67	R\$ 6,566.67
Laser printer	Multifunctional printer SAMSUNG XPRESS C480 - LASER WI-FI Colour L	4	R\$ 3,905.71	R\$ 15,622.83
TV	LED 55 Inches; 4K	1	R\$ 2,521.00	R\$ 2,521.00
Website	Website development	1	R\$ 8,000.00	R\$ 8,000.00
Total				R\$ 116,642.86

Pieces of furniture

There are two main ways to estimate costs of furniture: one way is to assess pieces of furniture individually; and another way is to find an average value per unit of office area (R\$/m²). Pieces of furniture have a varying value in the market, depending on aesthetic characteristics, brand and product quality. However, an approximate list of basic pieces of furniture for an executive office is provided in Table 6. In terms of price of furniture per unit of executive office area (planned spaces), the average value found in the market is around R\$ 300.00 per m².

Table 6: Office furniture, in Brazilian Real.

Description	Quantity	Price/Unit	Total
High standard office desk	3	R\$ 2,521.33	R\$ 7,563.99
Ordinary office desk	4	R\$ 424.50	R\$ 1,698.00
High standard office chair	3	R\$ 1,799.00	R\$ 5,397.00
Ordinary office chair	4	R\$ 428.30	R\$ 1,713.20
Meeting table	1	R\$ 2,998.00	R\$ 2,998.00
Meeting table's chairs	12	R\$ 252.00	R\$ 3,024.00
Book case	5	R\$ 559.00	R\$ 2,795.00
Low book case	3	R\$ 436.00	R\$ 1,308.00
Kitchen cabinet	2	R\$ 2,822.00	R\$ 5,644.00
TOTAL			R\$ 32,141.19

Cost estimates for kitchen appliances and utensils are presented in Table 7.

Table 7: Cost for kitchen appliances and utensils, in Brazilian Real.

Description	Quantity	Price/Unit	Total
Fridge	1	R\$ 1,899.00	R\$ 1,899.00
Stove	1	R\$ 759.05	R\$ 759.05
Coffee machine	1	R\$ 2,949.99	R\$ 2,949.99
Toaster	1	R\$ 221.00	R\$ 221.00
Blender	1	R\$ 219.00	R\$ 219.00
Tea cup set	1	R\$ 458.00	R\$ 458.00
Water glass set	1	R\$ 698.00	R\$ 698.00
Plates	10	R\$ 251.00	R\$ 2,510.00
Cutleries	1	R\$ 259.00	R\$ 259.00
TOTAL			R\$ 9,973.04

OPERATIONAL COSTS

The indicative operational costs for the proposed energy centres are categorised as follows: personnel (e.g. salaries), external services, disposable materials, travel costs, taxes and other costs. Each of these costs are following described.

Staff

Following the characteristics of similar centres (e.g. UNICA, LACTEC, CGEE, IBDE), it is assumed that the centre would have about 10 staff members, out of which 3 directors (CEO, executive director, technical director), 1 chairperson's assistant and 1 general assistant, 1 administrative manager, 1 technical advisor, 1 administrative assistant, 1 supporting staff (catering and other services) and 1 trainee (e.g. student, part-time work).

The director's positions may be recommended by the Administrative Council. They would be responsible for planning, organising, directing and controlling activities, as well as for defining strategies and taking steps to implement the decisions of the administrative council. Additionally, they

would follow the demands of the CEO for the success of the centre. The technical directors would be focus on the technological and regulatory issues, whereas the executive director would be responsible for leading the centre as a whole, including the representation of the centre in external activities. The position of assistant to the directors would be responsible for supporting the daily activities of the centre, scheduling appointments, organising meetings, and other administrative affairs.

The position of financial administrative manager would be responsible for accountability and budgetary issues, as well as contracts and agreements, and the preparation of balance reports ensuring transparency to all financial procedures. This position is under the supervision of the CEO. The technical advisor would be responsible for analysing projects and trends for renewable and gas technologies and regulatory issues, as well as identifying opportunities and keeping all the documentation (e.g. reports, database) updated. The advisor is under the supervision of the directors. Regarding the administrative assistant, responsibilities include general office tasks, preparation of correspondences, copies, protocols etc. The trainee would give technical support to the daily activities of the centre. The supporting staff is responsible for serving the office space, helping in meetings, including catering and cleaning.

In order to find the right parameters to estimate the staff costs, a number of online credible databases from specialised companies were assessed. In terms of salaries, the websites SalárioBR¹² and Catho¹³ were both used, as well as information from “Empregos e Carreiras da Folha de São Paulo”. For each of the proposed salaries, the national average values for middle-size organisations was considered, with a minimal requirement of five years of experience in the role. In general, the set of positions proposed for the Energy Centre does not show significant variation in terms of mean values for the different regions of the country and the assessed references, except for leading roles (directors). For the position of CEO, for example, we obtained as a national average salary R\$ 22,595.43 a month; however, as an average only for the three cities assessed, this value corresponds to R\$ 57,247.80 a month. Thus, given this high variation, we informally contacted a professional familiar with recruitment systems and HR processes, who suggested us to propose a salary range with rounded approximate values, taking the CEO as a main reference, varying from R\$ 30,000.00 to R\$ 50,000.00 a month (i.e. a range within the variation from national and local values), whilst also keeping the other directors with a similar variation, as shown in Table 8 and Table 9. This range might be useful for decision-makers to choose a value that meets the budgetary context of the entity more properly. No salaries were attributed to members of committees or advisory boards, which are all here assumed as a sporadic voluntary work. Besides, the simulation is not based on the Brazilian “simples national” tributary scheme.

¹² www.salario.br

¹³ www.catho.com.br

Table 8: Staff costs – Low estimate, in Brazilian Real

Job position	Salary	13 rd salary	Holiday	INSS (superannuation)	FGTS (fee)	Health grant	Health support	Food Grant	DSR and other fee	Overtime wage	TOTAL
CEO	R\$ 30,000.00	R\$ 2,500.00	R\$ 3,325.00	R\$ 6,000.00	R\$ 2,400.00	R\$ 1,000.00	R\$ 1,800.00	R\$ 1,100.00	R\$ 4,863.00	R\$ 3,900.00	R\$ 56,888.00
Technical Director	R\$ 26,000.00	R\$ 2,166.67	R\$ 2,881.67	R\$ 5,200.00	R\$ 2,080.00	R\$ 866.67	R\$ 1,800.00	R\$ 1,100.00	R\$ 4,214.60	R\$ 3,380.00	R\$ 49,689.60
Executive Director	R\$ 26,000.00	R\$ 2,166.67	R\$ 2,881.67	R\$ 5,200.00	R\$ 2,080.00	R\$ 866.67	R\$ 1,800.00	R\$ 1,100.00	R\$ 4,214.60	R\$ 3,380.00	R\$ 49,689.60
Financial Manager	R\$ 8,724.68	R\$ 727.06	R\$ 966.99	R\$ 1,744.94	R\$ 697.97	R\$ 290.82	R\$ 540.00	R\$ 660.00	R\$ 1,414.27	R\$ 1,134.21	R\$ 16,900.93
Technical Advisor	R\$ 6,752.29	R\$ 562.69	R\$ 748.38	R\$ 1,350.46	R\$ 540.18	R\$ 225.08	R\$ 540.00	R\$ 660.00	R\$ 1,094.55	R\$ 877.80	R\$ 13,351.42
CEO's assistant	R\$ 5,551.54	R\$ 462.63	R\$ 615.30	R\$ 1,110.31	R\$ 444.12	R\$ 185.05	R\$ 540.00	R\$ 660.00	R\$ 899.90	R\$ 721.70	R\$ 11,190.55
Directors' assistant	R\$ 4,609.21	R\$ 384.10	R\$ 510.85	R\$ 921.84	R\$ 368.74	R\$ 153.64	R\$ 540.00	R\$ 660.00	R\$ 747.15	R\$ 599.20	R\$ 9,494.73
Administrative assistant	R\$ 2,336.64	R\$ 194.72	R\$ 258.98	R\$ 467.33	R\$ 186.93	R\$ 77.89	R\$ 540.00	R\$ 660.00	R\$ 378.77	R\$ 303.76	R\$ 5,405.02
Catering support	R\$ 1,463.22	R\$ 121.94	R\$ 162.17	R\$ 292.64	R\$ 117.06	R\$ 48.77	R\$ 540.00	R\$ 660.00	R\$ 237.19	R\$ 190.22	R\$ 3,833.21
Trainee	R\$ 900.00							R\$ 660.00			R\$ 1,560.00
TOTAL	R\$ 112,337.58	R\$ 9,286.47	R\$ 12,351.00	R\$ 22,287.52	R\$ 8,915.01	R\$ 3,714.59	R\$ 8,640.00	R\$ 7,920.00	R\$ 18,064.03	R\$ 14,486.89	R\$ 218,003.07

Table 9: Staff costs – High estimate, in Brazilian Real.

Job position	Salary	13 rd salary	Holiday	INSS (superannuation)	FGTS (fee)	Health grant	Health support	Food Grant	DSR and other fee	Overtime wage	TOTAL
CEO	R\$ 50,000.00	R\$ 4,166.67	R\$ 5,541.67	R\$ 10,000.00	R\$ 4,000.00	R\$ 1,666.67	R\$ 1,800.00	R\$ 1,100.00	R\$ 8,105.00	R\$ 6,500.00	R\$ 92,880.00
Technical Director	R\$ 43,322.00	R\$ 3,610.17	R\$ 4,801.52	R\$ 8,664.40	R\$ 3,465.76	R\$ 1,444.07	R\$ 1,800.00	R\$ 1,100.00	R\$ 7,022.50	R\$ 5,631.86	R\$ 80,862.27
Executive Director	R\$ 43,322.00	R\$ 3,610.17	R\$ 4,801.52	R\$ 8,664.40	R\$ 3,465.76	R\$ 1,444.07	R\$ 1,800.00	R\$ 1,100.00	R\$ 7,022.50	R\$ 5,631.86	R\$ 80,862.27
Financial Manager	R\$ 8,724.68	R\$ 727.06	R\$ 966.99	R\$ 1,744.94	R\$ 697.97	R\$ 290.82	R\$ 540.00	R\$ 660.00	R\$ 1,414.27	R\$ 1,134.21	R\$ 16,900.93
Technical Advisor	R\$ 6,752.29	R\$ 562.69	R\$ 748.38	R\$ 1,350.46	R\$ 540.18	R\$ 225.08	R\$ 540.00	R\$ 660.00	R\$ 1,094.55	R\$ 877.80	R\$ 13,351.42
CEO's assistant	R\$ 5,551.54	R\$ 462.63	R\$ 615.30	R\$ 1,110.31	R\$ 444.12	R\$ 185.05	R\$ 540.00	R\$ 660.00	R\$ 899.90	R\$ 721.70	R\$ 11,190.55
Directors' assistant	R\$ 4,609.21	R\$ 384.10	R\$ 510.85	R\$ 921.84	R\$ 368.74	R\$ 153.64	R\$ 540.00	R\$ 660.00	R\$ 747.15	R\$ 599.20	R\$ 9,494.73
Administrative assistant	R\$ 2,336.64	R\$ 194.72	R\$ 258.98	R\$ 467.33	R\$ 186.93	R\$ 77.89	R\$ 540.00	R\$ 660.00	R\$ 378.77	R\$ 303.76	R\$ 5,405.02
Catering support	R\$ 1,463.22	R\$ 121.94	R\$ 162.17	R\$ 292.64	R\$ 117.06	R\$ 48.77	R\$ 540.00	R\$ 660.00	R\$ 237.19	R\$ 190.22	R\$ 3,833.21
Trainee	R\$ 900.00							R\$ 660.00			R\$ 1,560.00
TOTAL	R\$ 166,981.58	R\$ 13,840.13	R\$ 18,407.38	R\$ 33,216.32	R\$ 13,286.53	R\$ 5,536.05	R\$ 8,640.00	R\$ 7,920.00	R\$ 26,921.82	R\$ 21,590.61	R\$ 316,340.41

External services

The centre would involve a few other expenses, including external services and utility bills. This include accounting advisory, cleaning, website maintenance, water, electricity, sewage, telephone, urban transport app (e.g. UBER, 99) and other general expenses (Table 10).

Table 10: External services, in Brazilian Real per month.

Services	Total
Accountability advisory support	R\$ 1,000.00
Cleaning services	R\$ 1,000.00
Website maintenance	R\$ 1,200.00
Water, electricity, gas, telephone, broadband	R\$ 1,400.00
Transport	R\$ 2,880.00
Others	R\$ 500.00
Total	R\$ 7,980.00

These values were estimated based on average costs for the city of Sao Paulo as assumed to be the same for Rio de Janeiro and Brasília. In regard to the use of urban transport app, it is assumed that there will be approximately 6 trips a week at about R\$ 30 per trip, and that the centre will not have exclusive car and driver. In addition, there are some expenses with consumables and disposable products. This includes office materials, such as paper printer toner, visiting cards, and other graphical materials, as well as kitchen supply (e.g. coffee, tea, water and biscuits) (Table 11).

Table 11: Consumables and disposable products, in Brazilian Real per month.

Products	Total
Office materials	R\$ 1,100.00
Kitchen supply	R\$ 450.00
Cleaning products	R\$ 250.00
Others	R\$ 50.00
TOTAL	R\$ 1,950.00

Travelling costs

It was estimated that there would be about 9 national trips a month for about 3 days each trip on average and in economic class, and 6 international trips per year for 5 days each. For the national trips, it was assumed an average cost of R\$ 1,446.05¹⁴ per return flight, whereas for international travels this value would be about R\$ 12,449.60¹⁵. For daily accommodation and food expenses, it was estimated approximately R\$ 592.00 for national trips and US\$ 300.00 (exchange rate US\$ 1.00 equals R\$ 3.92, as in Dec 2018) for international trips (Table 12). Moreover, three additional national

¹⁴ Approximate values estimated for travels between São Paulo and other capitals such as Rio de Janeiro, Belo Horizonte, Fortaleza, Porto Alegre and Brasília, purchased with approximately 20 days in advance, according to three different air companies: GOL, LATAM and Avianca.

¹⁵ Approximate values estimated for direct flights from São Paulo to London, Paris and Brussels, with 30 days in advance, in executive class, for different air companies.

trips a month were included for members of the committee or guests in order to help and encourage them to participate in the energy centre’s meetings and other relevant activities. These additional trips may be important to sustain a good interaction with stakeholders, including the government.

Table 12: Travel costs and accommodation, in Brazilian Real per month.

Expenses	Total
Air tickets	R\$ 23,577.41
Accommodation	R\$ 24,252.00
Other	R\$ 500.00
TOTAL	R\$ 48,329.41

Building taxes and fees

There are some differences for building taxes and fees between a rented office and an own office. Average values for building fees (e.g. “taxa de condomínio” and “imposto predial”) considered were obtained according to the assessed offices, with building fees of about R\$ 3.300,00 and for taxes (e.g. IPTU) approximately R\$ 800.00;

Tributary considerations

Brazil has different tributary systems, which depend on the type of business model. Thus, the tributary impacts may vary, according to the applicable legislation, revenues and expenses, as well as on the state and municipality where the centre is located. Moreover, if the centre receives international funding support, different values of taxes may be applicable.

Summary of monthly costs

As already described, monthly costs are assumed to be the same for the three assessed cities (Rio de Janeiro, Sao Paulo and Brasília), except for the expenses with property rental which may vary locally. In addition, staff expenses are here shown as a range of low and high estimates for the salaries. Table 13 and Table 14 show a summary of the total monthly costs required to operate the energy centre, according to a low and high estimate, respectively.

Table 13: Summary of monthly costs – LOW estimate, in Brazilian Real.

Description	São Paulo	Brasília	Rio de Janeiro
STAFF EXPENSES	218,003.07	218,003.07	218,003.07
SERVICES	7,980.00	7,980.00	7,980.00
Accountability assistance	1,000.00	1,000.00	1,000.00
Cleaning	1,000.00	1,000.00	1,000.00
Website maintenance	1,200.00	1,200.00	1,200.00
Water, electricity, gas, telephone, and broadband	1,400.00	1,400.00	1,400.00
Local transport	2,880.00	2,880.00	2,880.00
Others	500.00	500.00	500.00
Office materials and other products	1,950.00	1,950.00	1,950.00
Office	1,100.00	1,100.00	1,100.00
Kitchen	450.00	450.00	450.00
Cleaning	250.00	250.00	250.00
Others	150.00	150.00	150.00
TRAVEL COSTS AND ACCOMMODATION	48,329.41	48,329.41	48,329.41
AIR TICKETS	23,577.41	23,577.41	23,577.41
ACCOMODATION	24,252.00	24,252.00	24,252.00
OTHERS	500.00	500.00	500.00
RENTED OFFICE FEES	18,708.00	22,672.00	19,656.00
FEE (condominium)	3,300.00	3,300.00	3,300.00
IPTU	800.00	800.00	800.00
Rentals (200 m ²)	14,608.00	18,572.00	15,556.00
OCCASIONAL EXPENSES	1,000.00	1,000.00	1,000.00
TOTAL	R\$ 295,970.47	R\$ 299,934.47	R\$ 296,918.47

Table 14: Summary of monthly costs – HIGH estimate, in Brazilian Real.

Description	São Paulo	Brasília	Rio de Janeiro
STAFF EXPENSES	316,340.41	316,340.41	316,340.41
SERVICES	7,980.00	7,980.00	7,980.00
Accountability assistance	1,000.00	1,000.00	1,000.00
Cleaning	1,000.00	1,000.00	1,000.00
Website maintenance	1,200.00	1,200.00	1,200.00
Water, electricity, gas, telephone, and broadband	1,400.00	1,400.00	1,400.00
Local transport	2,880.00	2,880.00	2,880.00
Others	500.00	500.00	500.00
Office materials and other products	1,950.00	1,950.00	1,950.00
Office	1,100.00	1,100.00	1,100.00
Kitchen	450.00	450.00	450.00
Cleaning	250.00	250.00	250.00
Others	150.00	150.00	150.00
TRAVEL COSTS AND ACCOMMODATION	48,329.41	48,329.41	48,329.41
AIR TICKETS	23,577.41	23,577.41	23,577.41
ACCOMODATION	24,252.00	24,252.00	24,252.00
OTHERS	500.00	500.00	500.00
RENTED OFFICE FEES	18,708.00	22,672.00	19,656.00
FEE (condominium)	3,300.00	3,300.00	3,300.00
IPTU	800.00	800.00	800.00
Rentals (200 m ²)	14,608.00	18,572.00	15,556.00
OCCASIONAL EXPENSES	1,000.00	1,000.00	1,000.00
TOTAL	R\$ 394,307.82	R\$ 398,271.82	R\$ 395,255.82

Potential sources of revenue:

Based on experiences of other institutions, the following potential sources of revenue were identified (not an exhaustive list of options):

- **Membership contribution:** this is a common way for a centre to obtain funding. However, if the centre asks for a membership contribution (e.g. annual fee), members would expect a differentiated treatment that would meet their interests, which may not be the objective of the energy centre. Besides, those that are not paying membership fees may not feel like a part of the centre.
- **Organisation of events:** several representative entities use to organise some sorts of events, which could be supported by sponsors and/or registration fees. International events could also be encouraged.
- **Organisation of training courses:** the centre could charge tuition fees for the participants. Possible courses include executive training programmes and international summer schools.
- **Contracts' management:** the centre could help manage project's application and contracts, and charge overheads for the service.
- **Certification:** some types of support for certification schemes could be considered (similar to ISO, IEEE). However, this may require specialised staff, and may not be the focus of the centre, although it is a possibility.
- **Preparation of technical studies:** this includes commissioned studies and other publications (e.g. books, reports, analysis and, potentially, a techno-scientific journal). These studies should not jeopardise the credibility and autonomy of the energy centre. Biased analysis should not be acceptable. It might be useful to have an editorial team to ensure quality standards and technical rigour, possibly including external reviewers.
- **Creation of a business room** (supported by a virtual space), in which members could meet and find projects of common interest to cooperate with the support of the energy centre.
- **Projects supported by R&D levy**, depending on the adopted business model for the centre and the requirements of the Brazilian Government, especially at ANP and ANEEL.
- **International grants**, such as for technology development projects, and studies. Examples of funding schemes are those from the UK Government (e.g. EPSRC, ESRC, NERC, BBSRC) and the Royal Society, the European Union (Horizon 2020, Marie Curie Global Fellowship), as well as funding schemes from other nations (e.g. Japanese JICA, USAID, French AFD, German GIZ), possibly in triangular collaboration with Brazil and the UK. Other potential partners for grant support are the World Bank, the International Energy Agency (IEA) and the United Nations.

Recommendations

The authors recommend the British Embassy in Brazil for the creation of an integrated energy centre. It may be called **Brazil-UK Energy Centre**, supported by the embassy as an independent initiative. This name would value the partnership between both nations, giving transparency, legitimacy and credibility to the centre. It may (or may not) affect the possibility of acting as a national coordination centre more broadly and collaborations with other countries, but this name may avoid potential resistance from other institutions, especially criticism about the UK role and funding sources. The centre may also serve as a successful benchmark in the energy sector for the British Embassy in Brazil and facilitate the communication with international stakeholders.

It is recommended that the centre should have a medium size, as proposed in this study. A too small centre may damage the credibility of the initiative from the onset, whereas a too large centre may jeopardise its financial sustainability in the long-term. Among the assessed cities, São Paulo appears to be the best option. The city has a strong national influence and dynamism, and presented the lowest total cost. São Paulo has a leading role in renewable energies and low carbon technologies, hosting several energy companies, associations and renowned R&D centres, as well as a good infrastructure, including easy air transport to other Brazilian cities and nations. Rio de Janeiro is also a very good option, with similar costs to São Paulo. Rio has a strong oil and gas industry, major electricity companies, the ANP and EPE headquarters and R&D centres. Both cities, Rio de Janeiro and São Paulo, have a branch of the British Chamber of Commerce and Industry in Brazil (Britcham), a British Consulate, and a British Council. Brasília is a good option as well. It has the British Embassy and representations of several other nations and international organisations, as well as ANEEL and IBAMA headquarters, and all the Ministries, including the Ministry of Mines and Energy (MME) and Itamaraty. However, it may emphasise a governmental role to the centre, which is not exactly the case of the current proposal, and it may be potentially perceived as a lobby institution.

The centre should focus on strategic thinking and serve as a centre of intelligence, finding solutions for sustainable energy futures in Brazil. It could also promote collaborations with UK partners. It should be independent, with both a physical and virtual location. It is recommended that the centre should not be physically located inside any university campus or energy company. This is important to be able to freely interact with centres across Brazil without showing any preferential support, as well as to protect its reputation, independence and credibility as a non-biased institution.

Moreover, the leadership of this centre should involve motivated people with sufficient knowledge of the energy sector, commitment, time dedication and good communication skills for interacting with different stakeholders across the country and worldwide. They may not necessarily be popular figures of the energy sector. In addition, the centre should promote diversity as part of its core values, including gender equality, people with special needs, and racial issues, showing no discrimination in its activities. For example, its staff should preferably have diversity balance, and the centre could promote initiatives alike with its stakeholders.

An initial funding support is required to start the centre until obtaining alternative funding sources to become a totally or partially self-sustained institution. The UK Government's Prosperity Fund is encouraged to provide the necessary support for its initial years of consolidation, ensuring a gradual transition towards a new business model. The centre should congregate leading stakeholders from the energy sector, while also keeping its autonomy and credibility. The implementation of the energy centre would require a detailed business plan for its long-term sustainability. Funding support via the energy-exploration levy in Brazil may be an option to partially support the centre, but it presents legal challenges and future uncertainties. It is also important to preserve the legitimacy and credibility of the centre over time, with transparency and democratic participation.

Acknowledgements

The project's authors acknowledge the generous contribution and attention of all those involved in the interviews (Table A1), who kindly accepted to participate in this project, whilst also keeping their comments and views anonymised in the main text for privacy reasons (Chatham House rules). The discussions presented in this study should not be attributed to the views of the participants or to their respective institutions. In addition, the authors thank Danielle Simões Guimarães from the Ministry of Mines and Energy (MME), who was not involved in the interviews, but kindly interacted with the team.

Table A1: List of people contacted for this project and their respective institutions.

	Name	Institution
1	Adriano Bonotto	Ministério da Relações Exteriores - MRE/DRN (Itamaraty)
2	Ailson Barbosa	Agência Nacional de Energia Elétrica - ANEEL
3	Alessandro Berredo	Transmissora Aliança de Energia Elétrica S.A. - TAESA
4	Alexandre Breda	Royal Dutch Shell
5	Alexandre de Figueiredo	Petróleo Brasileiro S. A. - Petrobras/CENPES
6	Alexandre Rasi Aoki	Universidade Federal do Paraná – UFPR
7	Alexandre Szklo	Programa de Planejamento Energético da COPPE/UFRJ
8	Alexei Macorin Vivan	Associação Bras. de Companhias de Energia Elétrica – ABCE
9	Alfredo Renault	Agência Nacional de Petróleo, Gás Natural e Biocombustíveis – ANP
10	Alvaro Miranda	Furnas Centrais Elétricas S/A
11	André Lucena	Programa de Planejamento Energético da COPPE/UFRJ
12	Antonio Carlos Caetano de Souza	Universidade Federal da Grande Dourados (UFGD) - Faculdade de Engenharia (FAEN)
13	Antonio de Padua Rodrigues	União da Indústria de Cana-de-açúcar - UNICA
14	Artur Moret	Fundação Universidade Federal de Rondônia
15	Aurelio Calheiros Melo Junior	Agência Nacional de Energia Elétrica - ANEEL
16	Carlos Eduardo de Freitas Brescia	Companhia de Gás de São Paulo - Comgas
17	Carmen Sanches	Agência Nacional de Energia Elétrica - ANEEL
18	Carolina Mariani	Empresa Brasileira de Pesquisa Energética – EPE
19	Clarissa Maria Forecchi Gloria	Ministério da Relações Exteriores - MRE/DRN (Itamaraty)
20	Claudia H. Provasi	Naturgy Energy Group - Naturgy
21	Cláudio Homero Ferreira da Silva	Companhia Energética de Minas Gerais - Cemig
22	Colombo Celso Gaeta Tassinari	Instituto de Energia e Ambiente da Universidade de São Paulo - IEE/USP
23	Denizar Cruz Martins	Universidade Federal de Santa Catarina – UFSC
24	Devanir Mantoani Junior	Companhia Paulista de Força e Luz - CPFL
25	Diana Azevedo	Universidade Federal do Ceará – UFCE
26	Diogo Pignataro	CERNE - Centro de Estratégias em Recursos Naturais e Energia – Natal/RN
27	Donato Aranda	União Brasileira do Biodiesel e Bioquerosene - Ubrabio e Universidade Federal do Rio de Janeiro - UFRJ
28	Edison Roberto Cabral da Silva	Universidade Federal da Paraíba - UFPB/PPGEE

29	Edson H Watanabe	Universidade Federal do Rio de Janeiro - UFRJ/Coppe
30	Eduardo Soriano	Ministério da Ciência, Tecnologia, Inovações e Comunicações - MCTIC
31	Fabício dos Santos Dantas	Instituto Nacional de Tecnologia – INT
32	Fernando Luiz Marcelo Antunes	Universidade Federal do Ceará – UFC
33	Francisco de Assis dos Santos Neves	Universidade Federal de Pernambuco – UFPE
34	Gabriela Pereira da Silva Maciel	Universidade Federal do Rio Grande do Sul – UFRGS
35	Germano Lambert-Torres	Instituto Gnarus
36	Gustavo Klinguefufus	Copel Distribuição
37	Ildo Luís Sauer	Instituto de Energia e Ambiente da Universidade de São Paulo - IEE/USP
38	Israel Lacerda de Araújo	Senado Federal
39	Ivo Barbi	Instituto Brasileiro de Eletrônica de Potência e Energias Renováveis
40	Ivo Leandro Dorileo	Universidade Federal de Mato Grosso - UFMT
41	Jamal da Silva Chaar	Universidade Federal do Amazonas - UFAM
42	Jamil Haddad	Universidade Federal de Itajubá - UNIFEI/EXCEN
43	Jaqueline Meneghel Rodrigues	Ministério de Minas e Energia - MME
44	Jonatas Trindade	Instituto Brasileiro de Meio Ambiente e Recursos Naturais – IBAMA
45	José Antenor Pomilio	Universidade Estadual de Campinas - UNICAMP
46	José Bione	Companhia Hidroelétrica do São Francisco – CHESF/ELETOBRAS
47	José Carlos Tigre	Agência Nacional de Petróleo, Gás Natural e Biocombustíveis – ANP
48	José Goldemberg	Instituto de Energia e Ambiente da Universidade de São Paulo - IEE/USP
49	José Roberto Zamian	Universidade Federal do Pará – UFPA
50	José Vital Zanardi	Agência Reguladora de Saneamento e Energia do Estado de São Paulo – ARSESP
51	Júlio Cesar Minelli	Associação de Produtores de Biodiesel do Brasil - APROBIO
52	Julio Meneghini	Research Center for Gas Innovation (RCGI) at the University of São Paulo - USP
53	Layssa Aline Okamura	Instituto SENAI de Inovação em Biomassa
54	Leandro de Barros Silva	Associação Nacional das Distribuidoras de Combustíveis, Lubrificantes, Logística e Conveniência - PLURAL
55	Luís Guilherme Barbosa Rolim	UFRJ - LAFAE (Laboratório de Fontes Alternativas de Energia)
56	Luiz Augusto Horta Nogueira	Universidade Federal de Itajubá - UNIFEI/EXCEN
57	Luiz Henrique Viana	Universidade Federal de Mato Grosso do Sul- UFMS
58	Marcelo Lima de Mendonça	Associação Brasileira das Empresas Distribuidoras de Gás Canalizado – ABEGAS
59	Marcelo Poppe	Centro de Gestão e Estudos Estratégicos - CGEE
60	Maria D’Assunção Costa	Instituto Brasileiro de Estudos do Direito da Energia – IBDE
61	Marilin Mariano dos Santos	Centro de Excelência em Biomassa (CENBIO), Instituto de Energia e Ambiente (IEE) da Universidade de São Paulo (USP)
62	Mario Dias Miranda	Associação Brasileira das Empresas de Transmissão de Energia Elétrica - ABRATE
63	Marney Pascoli Cereda	Universidade Católica de Mato Grosso do Sul - UFMS
64	Mauricio Beltrao de Rossiter Correa	Universidade Federal de Campina Grande – UFCG
65	Melissa Fernandez	Instituto Brasileiro de Petróleo – IBP
66	Murilo Alves Pereira	ITAIPU Binacional
67	Natália Weber	Universidade Federal do Rio Grande do Sul – UFRGS
68	Pedro Dittrich	Casa dos Ventos Energias Renováveis S.A.

69	Ricardo Alan Verdú Ramos	Universidade Estadual de São Paulo -UNESP - Campus de Ilha Solteira
70	Ricardo Kahn	Companhia de Transmissão de Energia Elétrica Paulista - ISA CTEEP
71	Ricardo Quadros Machado	Universidade de São Paulo – USP
72	Roberto Lamberts	Universidade Federal de Santa Catarina - UFSC
73	Rodrigo Lopes Sauaia	Associação Brasileira de Energia Solar Fotovoltaica - Absolar
74	Ruth Leão	Universidade Federal do Ceará – UFCE
75	Sandro Kiyoshi Yamamoto	Associação Brasileira de Energia Eólica - ABEEólica
76	Sandro Marcio Lima	Universidade Estadual de Mato Grosso do Sul – UFMS
77	Symone Christine de Araújo	Ministério de Minas e Energia - MME
78	Thiago Barral Freitas	Empresa Brasileira de Pesquisa Energética – EPE
79	Walmir Freitas	Universidade Estadual de Campinas - UNICAMP
80	Zevi Kann	Consultoria Empresarial em Energia e Regulação - Zenergas

Appendix 1

Original questionnaire in Portuguese version:

INTRODUCTORY PART:

O projeto “Avaliação de Centros de Energia no Brasil” é uma iniciativa da Embaixada Britânica no Brasil, com apoio do Prosperity Fund do Reino Unido. O projeto tem por objetivo conhecer o interesse das principais instituições atuantes na área de energia no Brasil em melhorar aspectos de coordenação nacional, sobretudo em assuntos de pesquisa, desenvolvimento, regulação e colaboração internacional. Para isso, o projeto envolverá a realização de questionário com entidades selecionadas de maior relevância nacional. Esse questionário foi desenvolvido pela equipe do projeto, formada por consultores independentes, sob coordenação do Dr. Alexandre Strapasson.

As informações e respostas ao questionário são sigilosas e as análises realizadas a partir de seus resultados guardarão o anonimato da fonte. Desde já agradecemos a sua colaboração!

Nome do entrevistado:

Instituição:

Funções principais do entrevistado:

E-mail:

MAIN PART (QUESTIONS):

1. O Governo Britânico está estudando criar iniciativas (ou uma instituição) no Brasil para se articular com instituições e empresas brasileiras do setor de Energia visando trabalhar em projetos nas áreas de regulação e Pesquisa e Desenvolvimento (P&D). Como você vê esta iniciativa? Na sua opinião, como deveria ser o formato desta instituição? Em que áreas mais especificamente ele deveria trabalhar?
2. Quais seriam as principais vantagens e desvantagens de se criar esse centro?
3. Você prevê alguma barreira ou resistência para configurar esse tipo de centro?
4. Uma vez criado, sua instituição estaria potencialmente interessada em participar desse centro?
5. Sua entidade já teve ou possui colaborações na área de energia com instituições britânicas? Se sim, você poderia citá-las?
6. Você acredita que esse centro poderia ajudar na captação de verbas de fundos setoriais (ex.: ANEEL e ANP) para realização de atividades em pesquisa e desenvolvimento?
7. Você teria alguma sugestão de potenciais funções ou atividades de interesse para esse centro de coordenação?
8. Há mais algum outro comentário que você gostaria de informar ou que seja importante para nosso conhecimento?
9. Caso necessário, você nos permitiria contatá-lo(a) futuramente para aprofundarmos algum assunto específico?

Appendix 2

This appendix presents an assessment of the main existing institutions working on energy in Brazil, particularly on research and development, and regulation. This list is not exhaustive and shows only the main stakeholders. The information provided in this appendix is also available in MS Excel version, which includes some few more descriptions not here shown due to format constraints.

The list of tables shown in the following pages are grouped into four main categories:

- **Main Energy Associations in Brazil;**
- **Main Energy Companies in Brazil;**
- **Main R&D Institutions in Brazil working on energy;**
- **Main Governmental Institutions in Brazil responsible for energy affairs.**

MAIN ENERGY ASSOCIATIONS IN BRAZIL

ACTIVITY	SHORT NAME	FULL NAME	START	ADDRESS	CITY	ST	PHONE	E-MAIL	WEBSITE	CONTACT
ELECTRICITY COMPANIES	ABCE	ASSOCIAÇÃO BRASILEIRA DE COMPANHIAS DE ENERGIA ELÉTRICA	1936	RUA PAES LEME, 215 – CONJ. 504 – ED. THERA OFFICE – PINHEIROS	SÃO PAULO	SP	(11) 3089-8800	abce@abce.org.br	www.abce.org.br/	ALEXEI MACORIN VIVAN
WIND ENERGY PRODUCERS	ABEEÓLICA	ASSOCIAÇÃO BRASILEIRA DE ENERGIA EÓLICA	2002	AV PAULISTA – 1337 – 5º ANDAR – SALA 51 - BELA VISTA	SÃO PAULO	SP	(11) 3674-1100	abeeolica@abeeolica.org.br	www.portalabeeolica.org.br/	ELBIA SILVA GANNOUM
NG DISTRIBUTORS	ABEGAS	ASSOCIAÇÃO BRASILEIRA DAS EMPRESAS DISTRIBUIDORAS DE GÁS CANALIZADO	1990	AV. ALMIRANTE BARROSO, 52 – SL 2002 - CENTRO	RIO DE JANEIRO	RJ	(21) 3970-1001/ 1008	abegas@abegas.org.br	https://www.abegas.org.br	GEORGE VENTURA MORAIS
ENERGY SELF PRODUCERS	ABIAPE	ASSOCIAÇÃO BRASILEIRA DOS INVESTIDORES EM AUTOPRODUÇÃO DE ENERGIA	ND	SCN QUADRA 4 ED. CENTRO EMPRESARIAL VARIG SALA 201	BRASILIA	DF	(61) 3326-7122	abiape@abiape.org.br	www.abiape.com.br/	MÁRIO LUIZ MENEL DA CUNHA
ELECTRICITY BIG CONSUMERS & FREE CONSUMERS	ABRACE	ASSOCIAÇÃO BRASILEIRA DE GRANDES CONSUMIDORES INDUSTRIAIS DE ENERGIA E DE CONSUMIDORES LIVRES	1984	SBN - QUADRA 01 BLOCO B Nº 14, SALAS 701/702 ED. CNC - ASA NORTE	BRASILIA	DF	(61) 3878-3500	abrace@abrace.org.br	http://abrace.org.br	EDVALDO SANTANA
ELECTRICITY TRADERS	ABRACEEL	ASSOCIAÇÃO BRASILEIRA DOS COMERCIALIZADORES DE ENERGIA ELÉTRICA	ND	SHS QUADRA 06 CONJUNTO A BLOCO C SALA 1707 ED. BUSINESS CENTER TOWER - BRASIL XXI	BRASILIA	DF	(61) 3223-0081	abraceel@abraceel.com.br	www.abraceel.com.br/	REGINALDO ALMEIDA DE MEDEIROS
ELECTRICITY DISTRIBUTORS	ABRADEE	ASSOCIAÇÃO BRASILEIRA DE DISTRIBUIDORES DE ENERGIA ELÉTRICA	1995	SCN - QUADRA 02 - BLOCO D - TORRE A - SALA 1101 - EDIFÍCIO LIBERTY MALL	BRASILIA	DF	(61) 3326-1312	abradee@abradee.com.br	www.abradee.com.br/	NELSON FONSECA LEITE
LPG SUPPLIERS	ABRAGÁS	ASSOCIAÇÃO BRASILEIRA DE ENTIDADES DE CLASSE DAS REVENDAS DE GÁS LP	2012	AV. RIO BRANCO, 103 -CENTRO	RIO DE JANEIRO	RJ	(21) 2221-6695	abragas@abragas.com.br	http://www.abragas.com.br	JOSÉ LUIZ ROCHA

MAIN ENERGY ASSOCIATIONS IN BRAZIL (Cont.)

ACTIVITY	SHORT NAME	FULL NAME	START	ADDRESS	CITY	ST	PHONE	E-MAIL	WEBSITE	CONTACT
ELECTRICITY PRODUCERS	ABRAGE	ASSOCIAÇÃO BRASILEIRA DAS EMPRESAS GERADORAS DE ENERGIA ELÉTRICA	1998	RUA ALVARENGA PEIXOTO, 1408 SALA 906 - SANTO AGOSTINHO	BELO HORIZONTE	MG	(31) 3292-4805	faleconosco@abrage.com.br	www.abrage.com.br/	FLÁVIO ANTÔNIO NEIVA
CLEAN ENERGY PRODUCERS	ABRAGEL	ASSOCIAÇÃO BRASILEIRA DE GERAÇÃO DE ENERGIA LIMPA	ND	SCN QUADRA 05, EDIFÍCIO BRASÍLIA SHOPPING. TORRE SUL. SALAS 1411/1412	BRASILIA	DF	(61) 3328-9443	abragel@abragel.org.br	https://www.abragel.org.br/	RICARDO PIGATTO
THERMAL ELECTRICITY PRODUCERS	ABRAGET	ASSOCIAÇÃO BRASILEIRA DE GERADORAS TERMELÉTRICAS	2001	PRAIA DE BOTAFOGO, 228 / 609	RIO DE JANEIRO	RJ	(21) 2296-9739/ 2253-0926	abraget@abraget.com.br	www.abraget.com.br/	ND
SMALL HYDRO ELECTRICITY PRODUCERS	ABRAPCH	ASSOCIAÇÃO BRASILEIRA DE PEQUENAS CENTRAIS HIDRELÉTRICA	2013	AV. SETE DE SETEMBRO, 4923 CJ. 1002 - BATEL	CURITIBA	PR	(41) 4101-3156	abrapch@abrapch.org.br	www.abrapch.org.br/	VALMOR ALVES
SOLAR THERMAL ENERGY COMPANIES	ABRASOL	ASSOCIAÇÃO BRASILEIRA DE ENERGIA SOLAR TÉRMICA	1992	AV. QUEIROZ FILHO, 1700 - TORRE E - SALA 17 - VILA HAMBURGUESA	SÃO PAULO	SP	(11) 2738-9009	contato@abrasol.org.br	www.abrasol.org.br	RAFAEL BOMFIM POMPEU DE CAMPOS
ELECTRICITY TRANSPORTERS	ABRATE	ASSOCIAÇÃO BRASILEIRA DAS EMPRESAS DE TRANSMISSÃO DE ENERGIA ELÉTRICA	1999	EDIFÍCIO VISION WORK & LIVE, SHN QUADRA 1, BLOCO F, ÁREA ESPECIAL A, SALAS 1304/1305 ASA NORTE	BRASÍLIA	DF	(61) 3263-6015/6016	abrate@abrate.org.br	http://www.abrate.org.br	MÁRIO MIRANDA
PHOTOVOLTAIC ELECTRICITY PRODUCERS	ABSOLAR	ASSOCIAÇÃO BRASILEIRA DE ENERGIA SOLAR FOTOVOLTAICA	2013	AV. PAULISTA, 1636, 10º ANDAR, CONJ. 1001/1002 BELA VISTA	SÃO PAULO	SP	(11) 3197-4560	absolar@absolar.org.br	http://www.absolar.org.br	RODRIGO LOPES SAUAIA
NGO	ACENDE	INSTITUTO ACENDE	ND	RUA JOAQUIM FLORIANO, 466 - EDIFÍCIO CORPORATE 501 - 5º ANDAR - ITAIM BIBI	SÃO PAULO	SP	(11) 3704-7733	contato@acendebr.com.br	www.acendebrasil.com.br	CLAUDIO J D SALES

MAIN ENERGY ASSOCIATIONS IN BRAZIL (Cont.)

ACTIVITY	SHORT NAME	FULL NAME	START	ADDRESS	CITY	ST	PHONE	E-MAIL	WEBSITE	CONTACT
SUGARCANE GROWERS	AFCP	ASSOCIAÇÃO DOS FORNECEDORES DE CANA DE PERNAMBUCO	1944	AV. MARECHAL MASCARENHAS DE MORAES, 2.028 - IMBIRIBEIRA	RECIFE	PE	(81) 3316-0955	alexandrea.lima@hotmail.com	www.afcp.com.br/	ALEXANDRE ANDRADE LIMA
ETHANOL PRODUCERS	ALCOPAR	SINDICATO DOS PRODUTORES DE ÁLCOOL E AÇÚCAR DO ESTADO DO PARANÁ	1981	AV CARNEIRO LEÃO 135 ED. EUROPA SALAS 903 A 904	MARINGÁ	PR	(44) 3225-2929	alcopar@alcopar.org.br	www.alcopar.org.br/	MIGUEL RUBENS TRAMIM
ENERGY CONSUMERS	ANACE	ASSOCIAÇÃO NACIONAL DOS CONSUMIDORES DE ENERGIA	2005	R. ALVORADA, 1289 – 9ºAND CJ 906, VILA OLIMPIA	SÃO PAULO	SP	(11) 2667-0993	anace@anacebrasil.org.br	www.anacebrasil.org.br/	CARLOS FARIA
ELECTRICITY FREE PRODUCERS	APINE	ASSOCIAÇÃO BRASILEIRA DOS PRODUTORES INDEPENDENTES DE ENERGIA ELÉTRICA	1995	QUADRA 06 EDIFICIO BUSINESS CENTER TOWER BRASIL XXI - BLOCO C - SALA 212	BRASÍLIA	DF	(61) 3224-6731	apine@apine.com.br	www.apine.com.br/	EDSON LUIZ DA SILVA
BIODIESEL PRODUCERS	APROBIO	ASSOCIAÇÃO DE PRODUTORES DE BIODIESEL DO BRASIL	2011	AV. BRIGADEIRO FARIA LIMA, 1903 - CONJ. 91 - JD. PAULISTANO	SÃO PAULO	SP	(11) 3031-4721	aprobio@aprobio.com.br	https://aprobio.com.br/	ERASMO CARLOS BATTISTELLA
SUGARCANE GROWERS	ASPLANA	ASSOCIAÇÃO DOS PRODUTORES DE CANA DE ALAGOAS	ND	RUA SÁ E ALBUQUERQUE, 502 - JARAGUA	MACEIÓ	AL	(82) 3216-5400	asplanaal@bol.com.br	https://www.facebook.com/asplana.al.1	EDGAR LEAHY ANTUNES
ETHANOL PRODUCERS	BIOSUL	ASSOCIAÇÃO DOS PRODUTORES DE BIOENERGIA DO MATO GROSSO DO SUL	2008	RUA GOIAS, 728 - JARDIM DOS ESTADOS	CAMPO GRANDE	MS	(67) 3324-3499	roberto.hollanda@biosulms.com.br	www.biosulms.com.br/	ROBERTO HOLLANDA FILHO
FUEL SUPPLIERS	BRASILCOM	ASSOCIAÇÃO DAS DISTRIBUIDORAS DE COMBUSTÍVEIS	1994	RUA GOIAS, 728 - JARDIM DOS ESTADOS	RIO DE JANEIRO	RJ	(21) 3197-0049	brasilcom@brasilcom.com.br	http://brasilcom.com.br	ROBERTO HOLLANDA FILHO
ETHANOL PRODUCERS	COPERSÚCAR	COOPERATIVA DE PRODUTORES DE CANA, AÇÚCAR E ÁLCOOL DO ESTADO DE SÃO PAULO	1959	AVENIDA PAULISTA, 287 - 1º, 2º E 3º ANDARES	SÃO PAULO	SP	(11) 2618-8649	lrpogetti@copersucar.com.br	www.copersucar.com.br/	LUIZ ROBERTO POGETTI

MAIN ENERGY ASSOCIATIONS IN BRAZIL (Cont.)

ACTIVITY	SHORT NAME	FULL NAME	START	ADDRESS	CITY	ST	PHONE	E-MAIL	WEBSITE	CONTACT
FUEL SUPPLIERS	FECOMBUSTÍVEIS	FEDERAÇÃO NACIONAL DO COMÉRCIO DE COMBUSTÍVEIS E DE LUBRIFICANTES	1960	AV. RIO BRANCO, 103 - 13º ANDAR - CENTRO	RIO DE JANEIRO	RJ	(21) 2221-6695	fecombustiveis@fecombustiveis.org.br	http://www.fecombustiveis.org.br/	PAULO MIRANDA SOARE
SUGARCANE GROWERS	FEPLANA	FEDERAÇÃO DOS PLANTADORES DA CANA DO BRASIL	1941	SCS QUADRA 1, BLOCO G ED BARACAT SALAS 204 À 206	BRASÍLIA	DF	(61) 3322-3856	feplana@feplana.com.br	www.feplana.com.br/	ALEXANDRE ANDRADE LIMA
ETHANOL PRODUCERS	FORUM	FORUM NACIONAL SUCROENERGÉTICO - FORUM	2003	SBS QUADRA 2 – LOTE A – ED. CASA DE SÃO PAULO, SALA 801	BRASÍLIA	DF	(61) 3223-2284	forumsucoalcooleiro@terra.com.br	ND	ANDRÉ LUIZ BAPTISTA LINS ROCHA
ENERGY RIGHTS	IBDE	INSTITUTO BRASILEIRO DE DEIREITO DA ENERGIA	2003	RUA CINCINATO BRAGA, 321 - 8º ANDAR	SÃO PAULO	SP	(11) 3284-1512	contato@ibde.com.br	http://www.ibdenergia.org.br/	MARIA D'ASSUNÇÃO COSTA
OIL & GAS E&P	IBP	INSTITUTO BRASILEIRO DO PETRÓLEO, GÁS E BIOCOMBUSTÍVEIS	1957	AVENIDA ALMIRANTE BARROSO, 52 – 26º ANDAR - CENTRO	RIO DE JANEIRO	RJ	(21) 2112-9000	melissa.fernandez@ibp.org.br	www.ibp.org.br	MELISSA FERNADEZ
NGO	ILUMINA	INSTITUTO DE DESENVOLVIMENTO ESTRATÉGICO DO SETOR ENERGÉTICO	ND	RUA CAPISTRANO DE ABREU N°12 - 3º ANDAR, BOTAFOGO	RIO DE JANEIRO	RJ	(21) 2266-1437	contato.ilumina@ilumina.org.br	www.ilumina.org.br	CARLOS AUGUSTO RAMOS KIRCHNER
FUEL SUPPLIERS	MINASPETRO	SINDICATO DO COMÉRCIO VAREJISTA DE DERIVADOS DE PETRÓLEO NO ESTADO DE MINAS GERAIS	1959	RUA AMOROSO COSTA, 144 -SANTA LÚCIA	BELO HORIZONTE	MG	(31) 2108-6500	minaspetro@minaspetro.com.br	www.minaspetro.com.br	CARLOS EDUARDO MENDES GUIMARÃES JUNIOR
SUGARCANE GROWERS	ORPLANA	ORGANIZAÇÃO DE PLANTADORES DE CANA DA REGIÃO CENTRO-SUL DO BRASIL	1976	AV. LUIZ EDUARDO TOLEDO PRADO, 870, IGUATEMI EMPRESARIAL, SALAS 1303/1304	RIBEIRÃO PRETO	SP	(16) 3603-2800	orplana@orplana.com.br	site.orplana.com.br/	EDUARDO VASCONCELLOS ROMÃO
FUEL SUPPLIERS	PLURAL / SINDICOM	ASSOCIAÇÃO NACIONAL DAS DISTRIBUIDORAS DE COMBUSTÍVEIS, LUBRIFICANTES, LOGÍSTICA E CONVENIÊNCIA	1941	AV. ALMIRANTE BARROSO, 52 SALA 2001	RIO DE JANEIRO	RJ	(21) 2122-7676	contato@somosplural.com.br	https://somosplural.com.br/	LEONARDO GADOTTI

MAIN ENERGY ASSOCIATIONS IN BRAZIL (Cont.)

ACTIVITY	SHORT NAME	FULL NAME	START	ADDRESS	CITY	ST	PHONE	E-MAIL	WEBSITE	CONTACT
FUEL SUPPLIERS	RECAP	SINDICATO DO COMÉRCIO VAREJISTA DE DERIVADOS DE PETRÓLEO DE CAMPINAS E REGIÃO	1988	RUA JOSÉ AUGUSTO CÉSAR, 233 - JARDIM CHAPADÃO	CAMPINAS	SP	(19) 3284-2450/ 3232-9800	recap@recap.com.br	www.recap.com.br	FLAVIO MARTINI DE SOUZA CAMPOS
ETHANOL PRODUCERS	SIAMIG	SINDICATO DE FABRICAÇÃO DO ALCÓOL DO ESTADO DE MINAS GERAIS	1964	AV. DO CONTORNO 4480, CONJ 1308 FUNCIONÁRIOS	BELO HORIZONTE	MG	(31) 3228-5544	siamig@siamig.com.br	www.siamig.com.br/	MARIO CAMPO
ETHANOL PRODUCERS	SIFAEG	SINDICATO DA INDÚSTRIA DE FABRICAÇÃO DE ALCÓOL DO ESTADO DE GOIÁS	1984	RUA C-236 Nº 44, JARDIM AMÉRICA	GOIANIA	GO	(62) 3274-3133	sifaeg@sifaeg.com.br	www.sifaeg.com.br/	ANDRÉ LUIZ BAPTISTA LINS ROCHA
FUEL SUPPLIERS	SINCOMBUSTÍVEIS	SINDICATO DO COMÉRCIO VAREJISTA DE DERIVADOS DE PETRÓLEO DO LITORAL CATARINENSE E REGIÃO SINCOMBUSTÍVEIS	2000	RUA JOSÉ FERREIRA DA SILVA, 43/ 1ª ANDAR/ SALA 07 - CENTRO	ITAJAÍ	SC	(47) 3241-0321	sincombustiveis@sincombustiveis.com.br	www.sincombustiveis.com.br	GIOVANI ALBERTO TESTONI
ETHANOL PRODUCERS	SIND/BA	SINDICATO DA INDÚSTRIA DO AÇÚCAR E ALCÓOL DO ESTADO DA BAHIA	ND	FAZENDA MASSAYÓ, CAIXA POSTA, 331	JUAZEIRO	BA	(74) 3612-2932	risilva@agrovale.com	ND	GUILHERME BASTOS COLAÇO DIAS
ETHANOL PRODUCERS	SIND/BA	SINDICATO DA INDÚSTRIA DO AÇÚCAR E ALCÓOL DO SUL DA BAHIA	ND	RUA EDISTIO PONDÉ 342 BAIRRO STIEP - CEP: 41770-395	SALVADOR	BA	(71) 3343-1255	sindacucarba@sieb.org.br	ND	LUIZ CARLOS QUEIROGA CAVALCANTE
ETHANOL PRODUCERS	SIND/MT	SINDICATO DA INDÚSTRIA DE FABRICAÇÃO DE ALCÓOL DO ESTADO DO MATO GROSSO	1985	AV. HISTORIADOR RUBENS DE MENDONÇA, 2.254 JARDIM ACLIMAÇÃO, ED. AMERICAN BUSINESS CENTER, S/ 302	CUIABÁ	MT	(65) 3642-2606	sindalcool@sindalcool-mt.com.br	www.sindalcool-mt.com.br/	SILVIO CESAR PEREIRA RANGEL

MAIN ENERGY ASSOCIATIONS IN BRAZIL (Cont.)

ACTIVITY	SHORT NAME	FULL NAME	START	ADDRESS	CITY	ST	PHONE	E-MAIL	WEBSITE	CONTACT
ETHANOL PRODUCERS	SIND/SE	SINDICATO DA INDÚSTRIA DO AÇÚCAR E DO ÁLCOOL DE SERGIPE	ND	RUA SIRIRI 496 SALA 05- 1º ANDAR - CENTRO	ARACAJÚ	SE	(79) 3281-1414	up.comercial@infonet.com.br	ND	OSWALDO LEITE FRANCO
ETHANOL PRODUCERS	SINDAÇUCAR/AL	SINDICATO DAS INDÚSTRIAS DO AÇÚCAR E DO ÁLCOOL NO ESTADO DE ALAGOAS	1944	AV. DR. ANTÔNIO GOUVEIA, 61 EDIFÍCIO OCEAN TOWER 3º ANDAR – SALAS 304/307	MACEIÓ	AL	(82) 2126-5511	secretaria@sindicucar-al.com.br	www.sindicucar-al.com.br	PEDRO ROBÉRIO DE MELO NOGUEIRA
ETHANOL PRODUCERS	SINDAÇUCAR/PB	SINDICATO DA INDÚSTRIA DO AÇÚCAR DO ESTADO DA PARAÍBA	ND	RUA JOÃO SUASSUNA, 18 – VARADOURO	JOÃO PESSOA	PB	(83) 2106-8522	diretoria@sindicucarpb.com.br	ND	EDUARDO RIBEIRO COUTINHO
ETHANOL PRODUCERS	SINDAÇUCAR/PE	SINDICATO DA INDÚSTRIA DO AÇÚCAR E DO ÁLCOOL, NO ESTADO DE PERNAMBUCO	1941	RUA CAIS DA ALFÂNDEGA, 130 B AIRRO DO RECIFE	RECIFE	PE	(81) 2137-7622	sindicucar@sindicucar.com.br	www.sindicucar.com.br/	RENATO AUGUSTO PONTE CUNHA
ETHANOL PRODUCERS	SINDÁLCOOL	SINDICATO DA INDÚSTRIA DE FABRICAÇÃO DO ÁLCOOL DO ESTADO DA PARAÍBA	1981	R. ANTÔNIO RABELO JÚNIOR, 170 (PISO P1 SALA 07) – MIRAMAR	JOÃO PESSOA	PB	(83) 3241-1843	sindalcool@sindalcool.com.br	https://sindalcool.com.br	EDMUNDO COLEHO BARBOSA
ETHANOL PRODUCERS	SINDCANALCOOL	SINDICATO DOS PRODUTORES DE CANA, AÇÚCAR E DO ÁLCOOL DO MARANHÃO E PARÁ	2000	AV. COLARES MOREIRA, Nº 7QUADA 1, ED. PANTA TOWER, 3º ANDAR, SALA 303 - RENASCENÇA II	SÃO LUIZ	MA	(98) 3227-7030	presidencia@sindicanalcool.com.br	www.sindicanalcool.com.br/	CINTIA CRISTINA TICIANELI
FUEL SUPPLIERS	SINDCOMB - MUNICÍPIO	SINDICATO DO COMÉRCIO VAREJISTA DE COMBUSTÍVEIS E LUBRIFICANTES E DE LOJAS DE CONVENIÊNCIA DO MUNICÍPIO DO RIO DE JANEIRO	1972	RUA ALFREDO PINTO, 76 - TIJUCA	RIO DE JANEIRO	RJ	(21) 3544-6444	secretaria@sindcomb.org.br	www.sindcomb.org.br	MARIA APARECIDA SIUFFO PEREIRA SCHNEIDER

MAIN ENERGY ASSOCIATIONS IN BRAZIL (Cont.)

ACTIVITY	SHORT NAME	FULL NAME	START	ADDRESS	CITY	ST	PHONE	E-MAIL	WEBSITE	CONTACT
FUEL SUPPLIERS	SINDCOMBUSTÍVEIS - MA	SINDICATO DOS REVENDEDORES DE COMBUSTÍVEL DO MARANHÃO	ND	AV. JERONIMO DE ALBUQUERQUE, 25, SALAS 518 E 520 EDIF. PÁTIO JARDINS - CALHAU	SÃO LUÍS	MA	(98) 98453-7975/ 98433-5941	secretaria@sindcombustiveis.-ma.com.br	www.sindcombustiveis-ma.com.br	ORLANDO PEREIRA DOS SANTOS
FUEL SUPPLIERS	SINDEPAC	SINDICATO DO COMÉRCIO VAREJISTA DE DERIVADOS DE PETRÓLEO DO ESTADO DO ACRE	1991	RUA PERNAMBUCO Nº 599 – SALA 4 BOSQUE	RIO BRANCO	AC	(68) 3226-1500	sindecap@hotmail.com	www.sindepac.com.br	KARYENNE SARAIVA MACHADO
FUEL SUPPLIERS	SINDESTADO - RJ	SINDICATO DO COMÉRCIO VAREJISTA DE COMBUSTÍVEIS, LUBRIFICANTES E LOJAS DE CONVENIÊNCIA NO ESTADO DO RIO DE JANEIRO	1963	AV. PRESIDENTE FRANKLIN ROOSEVELT, 296 - SÃO FRANCISCO	NITERÓI	CO	(21) 2704-9400	sindestado@sindestado.com.br	www.sindestado.com.br	RONALD BARROSO DO COUTO
SUGARCANE GROWERS	SINDICAPE	SINDICATO DOS CULTIVADORES DE CANA DE PERNAMBUCO	1963	RUA GRASIELA, 50 - IMBIRIBEIRA	RECIFE	PE	(81) 2125-4545	sindicapediretoria@veloxmail.com	www.sindicape.com.br/	GERSON CARNEIRO LEÃO
ETHANOL PRODUCERS	SINDICATO - PI	SINDICATO DOS PRODUTORES DE AÇÚCAR, DE ÁLCOOL E DE CANA DE AÇÚCAR DE UNIÃO E REGIÃO NO ESTADO DO PIAUÍ	ND	RUA SETE DE SETEMBRO, Nº 150 1º ANDAR BAIRRO CENTRO	TERESINA	PI	(86) 3265-6905	rosimary@comvap.com.br	ND	LUIZ FERNANDO PEREIRA DE MELO
FUEL SUPPLIERS	SINDICOMBUSTÍVEIS	SINDICATO DO COMÉRCIO VAREJISTA DE DERIVADOS DE PETRÓLEO DO ESTADO DE ALAGOAS	1984	AV. JUCÁ SAMPAIO, 2247 SALAS 93/94 SHOPPING MIRAMAR - BARRO DURO	MACEIÓ	AL	(82) 3320-1761	scvdpea@uol.com.br	www.sindicombustiveis-al.com.br	CARLOS HENRIQUE RIBEIRO TOLEDO
FUEL SUPPLIERS	SINDICOMBUSTÍVEIS - BA	SINDICATO DO COMÉRCIO DE COMBUSTÍVEIS, ENERGIAS ALTERNATIVAS E LOJAS DE CONVENIÊNCIAS DO ESTADO DA BAHIA	1963	AV. OTÁVIO MANGABEIRA, 3.127 COSTA AZUL	SALVADOR	BA	(71) 3342-9557	sindicombustiveis@sindicombustiveis.com.br	www.sindicombustiveis.com.br	WALTER TANNUS FREITAS

MAIN ENERGY ASSOCIATIONS IN BRAZIL (Cont.)

ACTIVITY	SHORT NAME	FULL NAME	START	ADDRESS	CITY	ST	PHONE	E-MAIL	WEBSITE	CONTACT
FUEL SUPPLIERS	SINDICOMBUSTÍVEIS - DF	SINDICATO DO COMÉRCIO VAREJISTA DE COMBUSTÍVEIS MINERAIS DO DISTRITO FEDERAL	1975	SHCGN-CR 704/705, BLOCO E, ENTRADA 41, 3ªANDAR, SALA 301	BRASÍLIA	DF	(61) 3274-2849	sindicato@sindicombustiveis-df.com.br	http://sindicombustiveis-df.com.br	ELISA SCHMITT MONTEIRO
FUEL SUPPLIERS	SINDICOMBUSTÍVEIS - PA	SINDICATO DO COMÉRCIO VAREJISTA DE DERIVADOS DE PETRÓLEO NO ESTADO DO PARÁ	1976	AV. DUQUE DE CAXIAS, 1337 - MARCO - TRAV. MARIZ E BARROS/TRAV.TIM BÓ	BELÉM	PA	(91) 3224-5742/ 3241-4473	secretaria@sindicombustiveis-pa.com.br	www.sindicombustiveis-pa.com.br	JOSÉ ANTONIO VICTOR DE SOUZA
FUEL SUPPLIERS	SINDICOMBUSTÍVEIS - PE	SINDICATO DO COMÉRCIO VAREJISTA DE DERIVADOS DE PETRÓLEO DE PERNAMBUCO	1961	RUA DESEMBARGADOR ADOLFO CIRÍACO, 15	RECIFE	PE	(81) 3227-1035	recepcao@sindicombustiveis-pe.org.br	www.sindicombustiveis-pe.org.br	ALFREDO PINHEIRO RAMOS
FUEL SUPPLIERS	SINDICOMBUSTÍVEIS - PR	SINDICATO DO COMÉRCIO VAREJISTA DE COMBUSTÍVEIS, DERIVADOS DE PETRÓLEO, GÁS NATURAL, BIOCMBUSTÍVEIS E LOJAS DE CONVENIÊNCIA DO ESTADO DO PARANÁ	1957	RUA VINTE E QUATRO DE MAIO, 2.522 PAROLIN	CURITIBA	PR	(41) 3021-7600	diretoria.sindi@sindicombustiveis-pr.com.br	www.sindicombustiveis-pr.com.br	RUI CICHELLA
FUEL SUPPLIERS	SINDICOMBUSTÍVEIS - RESAN	SINDICATO DO COMÉRCIO VAREJISTA DE DERIVADOS DE PETRÓLEO, GÁS NATURAL E BIOCMBUSTÍVEIS, E DE LOJAS DE CONVENIÊNCIA, E DE EMPRESAS DE LAVARÁPIDO E DE EMPRESAS DE ESTACIONAMENTO DE SANTOS E REGIÃO	1993	RUA DR. MANOEL TOURINHO, 269 - MACUCO	SANTOS	SP	(13) 3229-3535	secretaria@resan.com.br	www.resan.com.br	JOSÉ CAMARGO HERNANDES

MAIN ENERGY ASSOCIATIONS IN BRAZIL (Cont.)

ACTIVITY	SHORT NAME	FULL NAME	START	ADDRESS	CITY	ST	PHONE	E-MAIL	WEBSITE	CONTACT
FUEL SUPPLIERS	SINDICOMBUSTIVEIS-AM	SINDICATO DO COMÉRCIO VAREJISTA DE DERIVADOS DE PETRÓLEO, LUBRIFICANTES, ALCOOIS, E GÁS NATURAL DO ESTADO DO AMAZONAS	1989	RUA RIO IÇÁ, 26 – QUADRA 35. CONJ. VIEIRALVES -NOSSA SENHORA DAS GRAÇAS	MANAUS	AM	(92) 3584-3707	sindicombustiveisam@gmail.com	www.sindicombustiveis-am.org.br	ERALDO DE SOUZA TELES FILHO
FUEL SUPPLIERS	SINDILUB	SINDICATO INTERESTADUAL DO COMÉRCIO DE LUBRIFICANTES	1992	RUA TRÍPOLI, 92/CONJ.82 - VILA LEOPOLDINA	SÃO PAULO	SP	(11) 3644-3439 / 3645-2640	sindilub@sindilub.org.br	www.sindilub.org.br	LAERCIO DOS SANTOS KALAUSKAS
FUEL SUPPLIERS	SINDIPETRO	SINDICATO DO COMÉRCIO VAREJISTA DE DERIVADOS DE PETRÓLEO, DE EMPRESAS DE GARAGEM, ESTACIONAMENTO, DE LIMPEZA E CONSERVAÇÃO DE VEÍCULOS E LOJAS DE CONVENIÊNCIA DE CAXIAS DO SUL E REGIÃO	1985	RUA ÍTALO VICTOR BERSANI, 1134 - JARDIM AMÉRICA	CAXIAS DO SUL	RS	(54) 3222-0888	sindipetro@sindipetroserra.com.br	www.sindipetroserra.com.br	EDUARDO D'AGOSTINI MARTINS
FUEL SUPPLIERS	SINDIPETRO - PB	SINDICATO DO COMÉRCIO VAREJISTA DE DERIVADOS DE PETRÓLEO DO ESTADO DA PARAÍBA	1976	AV. MINAS GERAIS, 104 BAIRRO DOS ESTADOS	JOÃO PESSOA	PB	(83) 3221-0762/ 3578-0762	contato@sindipetropb.com.br	www.sindipetropb.com.br	OMAR ARISTIDES HAMAD FILHO
FUEL SUPPLIERS	SINDIPETRO - PI	SINDICATO DO COMÉRCIO VAREJISTA DE DERIVADOS DE PETRÓLEO DE TERESINA	ND	AV. TANCREDO NEVES, 8570 - LOURIVAL PARENTE	TERESINA	PI	(86) 3227-4996	sindipostopi@gmail.com	www.sindipetropi.org.br	ROBERT ATHAYDE DE MORAES MENDES
FUEL SUPPLIERS	SINDIPETRO - RO	SINDICATO DO COMÉRCIO VAREJISTA DE DERIVADOS DO PETRÓLEO DO ESTADO DE RONDÔNIA.	ND	TRAVESSA GUAPORÉ, ED. RIO MADEIRA, Nº 1, SALAS 307/308	PORTO VELHO	RO	(69) 3229-6987	sindipetrorondonia@gmail.com	ND	ND

MAIN ENERGY ASSOCIATIONS IN BRAZIL (Cont.)

ACTIVITY	SHORT NAME	FULL NAME	START	ADDRESS	CITY	ST	PHONE	E-MAIL	WEBSITE	CONTACT
FUEL SUPPLIERS	SINDIPETRO - SC	SINDICATO DO COMÉRCIO VAREJISTA DE DERIVADOS DE PETRÓLEO DE SANTA CATARINA	1977	RUA PORTO UNIÃO, 606 - ANITA GARIBALDI	JOINVILLE	SC	(47) 3433-0932 / 0875	sindipetro@sindipetro.com.br	www.sindipetro.com.br	LUIZ ANTONIO AMIN
FUEL SUPPLIERS	SINDIPETRÓLEO	SINDICATO DO COMÉRCIO VAREJISTA DE DERIVADOS DE PETRÓLEO DO ESTADO DE MATO GROSSO	1980	R. MANOEL LEOPOLDINO, 414 ARAÉ	CUIABÁ	MT	(65) 3621-6623	contato@sindipetroleo.com.br	www.sindipetroleo.com.br	ALDO LOCATELLI
FUEL SUPPLIERS	SINDIPOSTO	SINDICATO DO COMÉRCIO VAREJISTA DE DERIVADOS DE PETRÓLEO NO ESTADO DE GOIÁS	1980	12ª AVENIDA, 302 SETOR LESTE UNIVERSITÁRIO	GOIÂNIA	GO	(62) 3218-1100	sindiposto@sindiposto.com.br	www.sindiposto.com.br	MÁRCIO MARTINS DE CASTRO ANDRADE
FUEL SUPPLIERS	SINDIPOSTO - TO	SINDICATO DOS REVENDEDORES DE COMBUSTÍVEIS DO ESTADO DO TOCANTINS	ND	QUADRA 303 SUL, AV. LO 09 – LOTE 21 – SALAS 04 E 05	PALMAS	TO	(63) 3215-5737	sindiposto-to@sindiposto-to.com.br	www.sindiposto-to.com.br	WILBER SILVANO DE SOUSA FILHO
FUEL SUPPLIERS	SINDIPOSTOS - CE	SINDICATO DO COMÉRCIO VAREJISTA DE COMBUSTÍVEIS MINERAIS DO ESTADO DO CEARÁ,	1968	AV. ENGENHEIRO SANTANA JUNIOR, 3000/ SALA 605 PARQUE COCÓ	FORTALEZA	CE	(85) 3244-1147	sindipostos@sindipostos-ce.com.br	www.sindipostos-ce.com.br	PAULO SÉRGIO VASCONCELOS PEREIRA
FUEL SUPPLIERS	SINDIPOSTOS - ES	SINDICATO DO COMÉRCIO VAREJISTA DE DERIVADOS DE PETRÓLEO DO ESTADO DO ESPÍRITO SANTO	1982	AV. N. SRA DOS NAVEGANTES, 955/ SALAS 2101 E 2102 / ED. GLOBAL TOWER – ENSEADA DO SUÁ	VITÓRIA	ES	(27) 3322-0104	sindipostos@sindipostos-es.com.br	www.sindipostos-es.com.br	EVAL GALAZI
FUEL SUPPLIERS	SINDIPOSTOS - RN	SINDICATO DO COMÉRCIO VAREJISTA DE DERIVADOS DE PETRÓLEO DO RIO GRANDE DO NORTE	1980	RUA RAPOSO CÂMARA 3588 – CANDELÁRIA	NATAL	RO	(84) 3217-6076	sindipostosrn@sindipostosrn.com.br	www.sindipostosrn.com.br	ANTONIO CARDOSO SALES
FUEL SUPPLIERS	SINDIPOSTOS - RR	SINDICATO DO COMERCIO VAREJISTA DE DERIVADOS DE PETROLEO DO ESTADO DE RORAIMA	ND	AV. MAJOR WILLIAMS, 436 – SALA 01 - SÃO PEDRO	BOA VISTA	RR	(95) 3623-9368	sindipostosrr@hotmail.com	ND	JOSÉ NETO

MAIN ENERGY ASSOCIATIONS IN BRAZIL (Cont.)

ACTIVITY	SHORT NAME	FULL NAME	START	ADDRESS	CITY	ST	PHONE	E-MAIL	WEBSITE	CONTACT
FUEL SUPPLIERS	SINDÓPOLIS	SINDICATO DO COMÉRCIO VAREJISTA DE COMBUSTÍVEIS MINERAIS DE FLORIANÓPOLIS	1974	AV. PRESIDENTE KENNEDY, 222 – 2º ANDAR - CAMPINAS	SÃO JOSÉ	SC	(48) 3241-3908	sindopolis@sindopolis.com.br	www.sindopolis.com.br	LURRAN NASCIMENTO DE SOUZA
FUEL SUPPLIERS	SINDPESE	SINDICATO DO COMÉRCIO VAREJISTA DE DERIVADOS DE PETRÓLEO NO ESTADO DE SERGIPE	1990	RUA DEP. EUCLIDES PAES MENDONÇA, 871 - SALGADO FILHO	ARACAJU	SE	(79) 3214-4708	secretaria@sindpese.com.br	www.sindpese.com.br	MURILO DE PAULA MELQUIADES OLIVEIRA
FUEL SUPPLIERS	SINDTRR	SINDICATO NACIONAL DO COMÉRCIO TRANSPORTADOR REVENDEDOR RETALHISTA.	1976	RUA LORD COCKRANE, 616 - SALAS 801/804 E 810 - IPIRANGA	SÃO PAULO	SP	(11) 2914-2441	info@sindtrr.com.br	www.sindtrr.com.br	ALVARO RODRIGUES A FARIAS
FUEL SUPPLIERS	SINPEB	SINDICATO DO COMÉRCIO VAREJISTA DE DERIVADOS DE PETRÓLEO DE BLUMENAU	1974	RUA QUINZE DE NOVEMBRO, 550/SALA 407 - CENTRO	BLUMENAU	SC	(47) 3326-4249	sinpeb@bnu.matrix.com.br	www.sinpeb.com.br/	JÚLIO CÉZAR ZIMMERMANN
FUEL SUPPLIERS	SINPETRO	SINDICATO DO COMÉRCIO VAREJISTA DE COMBUSTÍVEIS, LUBRIFICANTES E LOJAS DE CONVENIÊNCIA DE MATO GROSSO DO SUL	1997	RUA BARIRI, 133 VILA GLÓRIA	CAMPO GRANDE	MS	(67) 3325-9988	sinpetro@sinpetro.com.br	www.sinpetro.com.br	CARLOS ALBERTO SILVEIRA MAIA
ETHANOL PRODUCERS	SISERJ	SINDICATO DA INDÚSTRIA SUCROENERGÉTICA DO ESTADO DO RIO DE JANEIRO – SISERJ	2002	RUA BRUNO DE AZEVEDO Nº 37 PARQUE JARDIM Mª QUEIROZ	CAMPOS DOS GOYTACAZES	RJ	(22) 2726-4386	siserj.usinas@gmail.com	ND	GERALDO BENEDICTO HAYEM COUTINHO
ETHANOL PRODUCERS	SONAL	SINDICATO DA INDÚSTRIA DE FABRICAÇÃO DO AÇÚCAR E DO ÁLCOOL DOS ESTADOS DO RN, CE, PI	ND	AV. SENADOR SALGADO FILHO, 2860 - CASA DA INDÚSTRIA 1º ANDAR LAGOA NOVA	NATAL	RN	(84) 3204-6200	ND	www.sindicatodaindustria.com.br	ARLINDO CAVALCANTI DE FARIAS

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ACTIVITY	SHORT NAME	FULL NAME	START	ADDRESS	CITY	ST	PHONE	E-MAIL	WEBSITE	CONTACT
FUEL SUPPLIERS	SULPETRO	SINDICATO INTERMUNICIPAL DO COMÉRCIO VAREJISTA DE COMBUSTÍVEIS E LUBRIFICANTES NO ESTADO DO RIO GRANDE DO SUL	1958	RUA CEL. GENUÍNO, 210 - CENTRO	PORTO ALEGRE	RS	(51) 3930-3800	presidencia@sulpetro.org.br	www.sulpetro.org.br	JOÃO CARLOS DAL'AQUA
BIODIESEL PRODUCERS	UBRABIO	UNIÃO BRASILEIRA DO BIODIESEL E DO BIOQUEROSENE	2007	SCN QUADRA 01 BLOCO C Nº85 - SALA 304 - EDIFÍCIO BRASÍLIA TRADE CENTER	BRASILIA	DF	(61) 2104-4411	faleconosco@ubrablo.com.br	https://ubrablo.com.br/	JUAN DIEGO FERRÉS
ETHANOL PRODUCERS	UDOP	UNIÃO DOS PRODUTORES DE BIOENERGIA	1985	PRAÇA JOÃO PESSOA, 26	ARAÇATUBA	SP	(18) 2103-0528	secretaria@udop.com.br	www.udop.com.br/	CELSO TORQUATO JUNQUEIRA FRANCO
ETHANOL PRODUCERS	UNICA	UNIÃO DA INDÚSTRIA DE CANA-DE-AÇÚCAR	1997	AV. BRIGADEIRO FARIA LIMA 2179 - 9º ANDAR	SÃO PAULO	SP	(11) 3093-4949	elizabeth.farina@unica.com.br	www.unica.com.br/	ELIZABETH FARINA
SUGARCANE GROWERS	UNIDA	UNIÃO NORDESTINA DOS FORNECEDORS DE CANA DO NORDESTE	ND	AV. MARECHAL MASCARENHAS DE MORAES, 2.028 - IMBIRIBEIRA	RECIFE	PE	(81) 3316-0955	alexandrea.lima@hotmail.com	ND	ALEXANDRE ANDRADE LIMA

MAIN ENERGY COMPANIES IN BRAZIL

ACTIVITY	SHORT NAME	FULL NAME	START	ADDRESS	CITY	ST	REGION	PHONE	E-MAIL	WEBSITE
ELECTRICITY DISTRIBUTION	ENEL	ENEL Distribuição São Paulo (AES ELETROPAULO)	1981	AV. DR. GETÚLIO VARGAS 172, MAUÁ, SP	SÃO PAULO	SP	SE	0800-7273110	amadeu.macedo@aes.com	https://www.aeseletpaulo.com.br
ELECTRICITY TRANSMISSION	CTEEP	COMPANHIA DE TRANSMISSÃO DE ENERGIA ELÉTRICA PAULISTA	1999	Rua Casa do Ator, 1.155 - Vila Olímpia	SÃO PAULO	SP	SE	11 3138-7000	ricardok@isactEEP.com.br	http://www.isactEEP.com.br/
NATURAL GAS DISTRIBUTION	COMGÁS	COMPANHIA DE GÁS DE SÃO PAULO	1872	VIA DE ACESSO ENGENHEIRO IVO NAJM, 3800 – 2º DISTRITO INDUSTRIAL	SÃO PAULO	SP	SE	(11) 4504-5000	cbrescia@comgas.com.br	www.comgas.com.br
NATURAL GAS DISTRIBUTION	NATURGY	NATURGY (GAS NATURAL FENOSA)	1843	Av. Gisele Constantino, 1850 - 14º andar, Torre I	VOTORANTIM	SP	SE	(15) 3224-5260	proviasi@gasnaturalfenosa.com	www.gasnatural.com
OIL & GAS	PETROBRAS	PETROBRAS - PETRÓLEO BRASILEIRO S.A	1953	AV. REPÚBLICA DO CHILE, 65 - CENTRO	RIO DE JANEIRO	RJ	SE	(21) 3224-4477	pbm@petrobras.com.br	www.petrobras.com.br
OIL & GAS	SHELL	SHELL BRASIL LTDA	1961	AV. DAS AMÉRICAS, 4200 - BLOCO 5 (SLS 101 A 107) E BLOCO 6 (SLS 101 A 601) - BARRA DA TIJUCA	RIO DE JANEIRO	RJ	SE	0800 727 52 70	alexandre.breda@shell.com	www.shell.com.br
PETROCHEMISTRY	BRASKEM	BRASKEM S/A	2002	AV. NAÇÕES UNIDAS, 8501 - 24º ANDAR - EDIFÍCIO ELDORADO BUSINESS TOWER - PINHEIROS	SÃO PAULO	SP	SE	(11) 3576-9999	ND	www.braskem.com.br
ELECTRICITY DISTRIBUTION	CEMIG	COMPANHIA ENERGÉTICA DE MINAS GERAIS S.A.	1950	AVENIDA JOSÉ FERREIRA CAPETINGA, 750, B: CENTRO TIROS	MINAS GERAIS	MG	SE	31 35065042	camaciell@cemig.com.br	www.cemig.com.br
ELECTRICITY GEN., TRANSM. & DISTRIB.	COPEL	COMPANHIA PARANAENSE DE ENERGIA	1954	RUA CORONEL DULCÍDIO, 800	CURITIBA	PR	S	0800 51 00 116	andre.pedretti@copel.com	http://www.copel.com/
ELECTRICITY GENERATION	ELETRONORTE	CENTRAIS ELÉTRICAS DO NORTE DO BRASIL S.A	1973	SCN Quadra 06 Conj. A, Blocos B e C, Entrada Norte 1, Asa Norte	BRASÍLIA	DF	CO	61 34296146	michele.silveira@eletronorte.gov.br	http://www.eletronorte.gov.br/
ELECTRICITY GENERATION	FURNAS	FURNAS CENTRAIS ELÉTRICAS S.A	1957	Rua Real Grandeza, 219 - Botafogo	RIO DE JANEIRO	RJ	SE	21 2528-3112	miranda@furnas.com.br	http://www.furnas.com.br/
ELECTRICITY GENERATION	ITAIPU	ITAIPU - BINACIONAL	1973	Av. Sílvio Américo Sasdelli, 800	FOZ DO IGUAÇU	PR	S	(45) 3520-5252	iunovich@itaipu.gov.br	www.itaipu.gov.br/
ELECTRICITY GENERATION	CHESF	COMPANHIA HIDRELÉTRICA DO SÃO FRANCISCO	1945	Rua Delmiro Gouveia, 333 - San Martin	RECIFE	PE	NE	81 32292194	jbionif@chesf.gov.br	www.chesf.gov.br/
OIL & GAS	PETROGAL	PETROGAL BRASIL LTDA	ND	Av. República do Chile, 330	RIO DE JANEIRO	RJ	SE	(21) 3850-4200	petrogalbrasil@galpenergia.com.br	www.galpenergia.com

MAIN ENERGY COMPANIES IN BRAZIL (Cont.)

ACTIVITY	SHORT NAME	FULL NAME	START	ADDRESS	CITY	ST	REGION	PHONE	E-MAIL	WEBSITE
OIL & GAS	REPSOL	REPSOL YPF BRASIL S/A	1922	PR DE BOTAFOGO, 300 - 7º ANDAR - BOTAFOGO	RIO DE JANEIRO	RJ	SE	(21) 25597000	contato@repsolsinopec.com / nalvarez@repsol.com	www.ypf.com.br
REFINERIES	REPLAN	REPLAN (REFINARIA DE PAULÍNIA)	1972	RODOVIA SP 332 - KM 130 - BONFIM	PAULÍNIA	SP	SE	(19) 2116-6100	ND	www.petrobras.com.br
REFINERIES	REVAP	REVAP (REFINARIA HENRIQUE LAGE)	1974	RODOVIA PRESIDENTE DUTRA KM 143 - BR 116 - JARDIM DIAMANTE	SÃO JOSÉ DOS CAMPOS	SP	SE	(12) 3928-6311	ND	www.petrobras.com.br
ELECTRICITY DISTRIBUTION	CPFL	CPFL PAULISTA	1912	ROD. ENG. MIGUEL NOEL N. BURNIER, 1775	CAMPINAS	SP	SE	(19) 37566096	devanir@cpfl.com.br	www.cpfl.com.br
ELECTRICITY DISTRIBUTION	ELETOBRAS	ELETOBRAS AMAZONAS ENERGIA	1895	AV. SETE DE SETEMBRO, 2414	MANAUS	AM	N	0800 701 3001	ND	www.eletobrasamazonas.com/
ELECTRICITY DISTRIBUTION	MUXFELDT	MUXFELDT, MARIN & CIA. LTDA.	1947	RUA DO COMÉRCIO, 1420 - CENTRO - TAPEJARA	RIO GRANDE DO SUL	RS	S	54 3344-1277	azanini@muxenergia.com.br	http://muxenergia.com.br/
ELECTRICITY DISTRIBUTION	AES	AES SUL DISTRIBUIÇÃO GAÚCHA DE ENERGIA S.A.	1981	RUA DONA LAURA 320, PORTO ALEGRE, RS,	PORTO ALEGRE	RS	S	(51) 3477-2020	ND	https://www.rgesul.com.br
ELECTRICITY DISTRIBUTION	AES	AES TIETÊ S/A	1981	AV. NAÇÕES UNIDAS 17 17, BAURU, SP	SÃO PAULO	SP	SE	(14) 2106-3400	ND	https://www.aestiete.com.br/
ELECTRICITY DISTRIBUTION	AMPLA	AMPLA ENERGIA E SERVIÇOS S.A. / Enel Distribuição Rio	1996	AV. VISCONDE DO RIO BRANCO 429, NITERÓI,	RIO DE JANEIRO	RJ	SE	(24) 3352-1235	ND	www.eneldistribuicao.com.br
ELECTRICITY DISTRIBUTION	CAIUÁ	CAIUÁ DISTRIBUIÇÃO DE ENERGIA S.A.	1929	AV. PAULISTA, 2439 - BELA VISTA	SÃO PAULO	SP	SE	(11) 3060-8722	ND	grupoenergisa.com.br
ELECTRICITY DISTRIBUTION	CEA	COMPANHIA DE ELETRICIDADE DO AMAPÁ	1960	RUA JOVINO DINOIA, 3807 - BEIROL	MACÁPA	AP	N	(96) 3212-1300	ND	https://cea.portal.ap.gov.br/
ELECTRICITY DISTRIBUTION	CEB	COMPANHIA ENERGÉTICA DE BRASÍLIA DISTRIBUIÇÃO S.A.	1968	CNM 1, BL. G, LJ. 3, CEILÂNDIA	BRASÍLIA	DF	CO	(61) 3371-5500	ND	www.ceb.com.br
ELECTRICITY DISTRIBUTION	CEEE	COMPANHIA ESTADUAL DE DISTRIBUIÇÃO DE ENERGIA ELÉTRICA	1943	RUA FRANCISCO CARVALHO DA CUNHA 177	RIO GRANDE DO SUL	RS	S	(51) 3492-8053	ND	www.ceee.com.br

MAIN ENERGY COMPANIES IN BRAZIL (Cont.)

ACTIVITY	SHORT NAME	FULL NAME	START	ADDRESS	CITY	ST	REGION	PHONE	E-MAIL	WEBSITE
ELECTRICITY DISTRIBUTION	CELESC	CENTRAIS ELÉTRICAS DE SANTA CATARINA S.A.	1955	AV. GETÚLIO VARGAS, 288	SANTA CATARINA	SC	S	0800-480196	ND	http://www.celesc.com.br
ELECTRICITY DISTRIBUTION	CELG	CELG DISTRIBUIÇÃO S.A.	1992	RUA DEZ DE MARÇO 175, ANÁPOLIS	GOIÁS	GO	CO	0800 062 1500	ND	https://www.eneldistribuicao.com.br/go/
ELECTRICITY DISTRIBUTION	CELPA	CENTRAIS ELÉTRICAS DO PARÁ S.A.	1962	AV. PRES. CASTELO BRANCO 560, SANTA LUZIA DO PARÁ	BELÉM	PA	N	(91) 3445-1244	ND	www.celpe.com.br
ELECTRICITY DISTRIBUTION	CELPE	COMPANHIA ENERGÉTICA DE PERNAMBUCO	1965	RUA GEN. DANTAS BARRETO 188, GARANHUNS	PERNAMBUCO	PE	NE	(81) 99532-0246	ouvidoria.pe@neoenergia.com	www.celpe.com.br
ELECTRICITY DISTRIBUTION	CELTINS	COMPANHIA DE ENERGIA ELÉTRICA DO ESTADO DO TOCANTINS	1989	RUA TOCANTINS 592, PARAÍSO DO TOCANTINS,	TOCANTIS	TO	NE	0800 721 3330	ND	www.celtins.com.br
ELECTRICITY DISTRIBUTION	CEMAR	COMPANHIA ENERGÉTICA DO MARANHÃO	1959	AV. SEN. VITORINO FREIRE, S/N	MARANHÃO	MA	NE	(98) 3217-2600	ND	www.cemar116.com.br
ELECTRICITY DISTRIBUTION	CEMAT	CENTRAIS ELÉTRICAS MATOGROSSENSES S.A.	1958	AV. GOV. DANTE MARTINS DE OLI,	CUIABÁ	MT	CO	(65) 3316-5222	ND	https://www.energisa.com.br/
ELECTRICITY DISTRIBUTION	CERR	COMPANHIA ENERGÉTICA DE RORAIMA	1969	AV. PRES. CASTELO BRANCO, 1163 - CALUNGA, BOA VISTA	RORAIMA	RR	N	(95) 4009-1500	info@cerr.net.br	www.cerr.net.br/
ELECTRICITY DISTRIBUTION	CFLO	COMPANHIA FORÇA E LUZ DO OESTE	1909	Av. Manoel Ribas, 2525 - Centro	GUARAPUAVA	PR	S	(42) 3621-9000	ND	https://www.energisa.com.br/
ELECTRICITY DISTRIBUTION	CHESP	Companhia Hidroelétrica São Patrício	1949	AV. PRESIDENTE VARGAS, 618 – CENTRO - CERES	GOIANIA	GO	CO	0800 62 2003	ouvidoria@chesp.com.br	www.chesp.com.br/
ELECTRICITY DISTRIBUTION	CNEE	COMPANHIA NACIONAL DE ENERGIA ELÉTRICA	1943	Av. Paulista, 2439 - Bela Vista	SÃO PAULO	SP	SE	(11) 3061-5431		https://www.energisa.com.br/
ELECTRICITY DISTRIBUTION	COCEL	COMPANHIA CAMPOLARGUENSE DE ENERGIA	1968	RUA AGOSTINHO MOCELIN 520, CAMPO LARGO	PARANÁ	PR	S	(41) 2169-2121	ouvidoria@cocel.com.br	www.cocel.com.br
ELECTRICITY DISTRIBUTION	COELBA	COMPANHIA DE ELETRICIDADE DO ESTADO DA BAHIA	1960	RUA DA INDONESIA 1029, SALVADOR	BAHIA	BA	NE	(71) 3370-5123	ouvidoria.ba@neoenergia.com	www.coelba.com.br

MAIN ENERGY COMPANIES IN BRAZIL (Cont.)

ACTIVITY	SHORT NAME	FULL NAME	START	ADDRESS	CITY	ST	REGION	PHONE	E-MAIL	WEBSITE
ELECTRICITY DISTRIBUTION	COELCE	COMPANHIA ENERGÉTICA DO CEARÁ	1971	AV. MIN. ALBUQUERQUE LIMA 775, FORTALEZA	CEARÁ	CE	NE	(85) 3272-1211	isabel.alcantara@enel.com	www.coelce.com.br
ELECTRICITY DISTRIBUTION	COOPERALIANÇA	COOPERATIVA ALIANÇA	1939	R. IPIRANGA, 333 - CENTRO	SANTA CATARINA	SC	S	(48) 3461 3200	ND	http://www.cooperalianca.com.br/
ELECTRICITY DISTRIBUTION	COSERN	COMPANHIA ENERGÉTICA DO RIO GRANDE DO NORTE	1961	RUA MERMOZ, 150 CIDADE ALTA, NATAL	RIO GRANDE DO NORTE	RN	NE	(84) 991618936	ouvidoria.rn@neoenergia.com	www.cosern.com.br
ELECTRICITY DISTRIBUTION	CPFL	CPFL JAGUARI	1912	R VIGATO , 1620, TERREO SALA 2	JAGUARIUNA	SP	SE	(19) 3847-5900	ND	https://www.cpfl.com.br
ELECTRICITY DISTRIBUTION	CPFL	CPFL LESTE PAULISTA	1909	ROD ENG MIGUEL NOEL NASCENTES BURNIER, KM 2,5 Nº1755 – BLOCO 1 – 3ºANDAR PQ. SÃO QUIRINO	CAMPINAS	SP	SE	0800 774 5517	ND	https://www.cpfl.com.br/
ELECTRICITY DISTRIBUTION	CPFL	CPFL MOCOCA	ND	R. Alferes Pedrosa, 227 - Centro	MOCOCA	SP	SE	0800 774 4480	ND	https://www.cpfl.com.br/
ELECTRICITY DISTRIBUTION	CPFL	CPFL PIRATININGA	ND	Rodovia Engenheiro Miguel Noel Nascentes Burnier, Km 2,5, nº 1755	CAMPINAS	SP	SE	0800 774 4480	ND	https://www.cpfl.com.br/
ELECTRICITY DISTRIBUTION	CPFL	CPFL SANTA CRUZ	ND	Rodovia Engenheiro Miguel Noel Nascentes Burnier, Km 2,5, nº 1755	CAMPINAS	SP	SE	0800 774 4480	ND	https://www.cpfl.com.br/
ELECTRICITY DISTRIBUTION	CPFL	CPFL SUL PAULISTA	ND	Rodovia Engenheiro Miguel Noel Nascentes Burnier, Km 2,5, nº 1755	CAMPINAS	SP	SE	0800 774 4480	ND	https://www.cpfl.com.br/
ELECTRICITY DISTRIBUTION	DEMEI	DEPARTAMENTO MUNICIPAL DE ENERGIA ELÉTRICA DE IJUÍ	1973	AVENIDA GETÚLIO VARGAS, 1454	IJUÍ	RS	S	0800.51.9200	ND	http://www.demei.com.br/
ELECTRICITY DISTRIBUTION	DMED	DME DISTRIBUIÇÃO S.A.	1954	R. AMAZONAS, 65 - CENTRO	POÇOS DE CALDAS	MG	SE	0800 035 0196	ND	http://www.dme-pc.com.br/
ELECTRICITY DISTRIBUTION	ENERGISA	ENERGISA	1905	Pasteur - Av. Pasteur, 110 - Botafogo	RIO DE JANEIRO	RJ	SE	(21) 2122-6900	ND	http://holding.grupoenergisa.com.br
ELECTRICITY DISTRIBUTION	EDP	EDP BANDEIRANTE	1998	RUA VOLUNTÁRIO FERNANDO PINHEIRO FRANCO, 966 - CENTRO	MOGI DAS CRUZES	SP	SE	0800 721 0123	ND	http://www.edp.com.br/
ELECTRICITY DISTRIBUTION	EDP	EDP ESCELSA	1950	E 210, PRAÇA COSTA PEREIRA, 208 - CENTRO	VITÓRIA	ES	SE	0800 721 0707	ND	http://www.edp.com.br/
ELECTRICITY DISTRIBUTION	EFLJC	EMPRESA FORÇA E LUZ JOÃO CESA	1962	R. JOSÉ DO PATROCÍNIO, 56	SIDERÓPOLIS	SC	S	(48) 3435-8300	ND	https://www.joaocesa.com.br/

MAIN ENERGY COMPANIES IN BRAZIL (Cont.)

ACTIVITY	SHORT NAME	FULL NAME	START	ADDRESS	CITY	ST	REGION	PHONE	E-MAIL	WEBSITE
ELECTRICITY DISTRIBUTION	EFLUL	EMPRESA FORÇA E LUZ DE URUSSANGA LTDA.	1944	RUA SIQUEIRA CAMPOS - Nº 254 - CENTRO	URUSSANGA	SC	S	(48) 3441-1000	eflul@eflul.com.br	http://www.eflul.com.br/
ELECTRICITY DISTRIBUTION	ELEKTRO	ELEKTRO ELETRICIDADE E SERVIÇOS S.A.	1998	Rua Ary Antenor de Souza, 321 - -, Jd. Nova América	CAMPINAS	SE	SE	(19) 2122-1000	poder.publico@elektro.com.br	https://www.elektro.com.br/
ELECTRICITY DISTRIBUTION	ELETOBRAS	ELETOBRAS DISTRIBUIÇÃO ACRE	ND	R. Valério Magalhães, 226 - Bosque	RIO BRANCO	AC	N	(68) 3212-5700	ND	http://eletrobras.com/
ELECTRICITY DISTRIBUTION	ELETOBRAS	ELETOBRAS DISTRIBUIÇÃO ALAGOAS	1961	Av. Fernandes Lima, nº 3349, Gruta de Lourdes	MACEIÓ	AL	NE	0800 082 0196	ND	http://eletrobras.com/
ELECTRICITY DISTRIBUTION	ELETOBRAS	ELETOBRAS DISTRIBUIÇÃO PIAUÍ	1962	RUA VIRGÍLIO CAMPELO, S/N, BAIRRO CENTRO	TERESINA	PI	NE	ND	ND	http://eletrobras.com/
ELECTRICITY DISTRIBUTION	ELETOBRAS	ELETOBRAS DISTRIBUIÇÃO RONDÔNIA	1968	AV. IMIGRANTES 4137 (BAIRRO INDUSTRIAL)	PORTO VELHO	RO	N	(69) 3216.4000	Marcio Ferreira	http://eletrobras.com/
ELECTRICITY DISTRIBUTION	ELETOCAR	CENTRAIS ELÉTRICAS DE CARAZINHO S.A.	1968	Av. PÁTRIA, 1351	CARAZINHO	RS	S	0800 541 0099	ND	http://www.eletoacar.com.br/
ELECTRICITY DISTRIBUTION	ELFSM	EMPRESA LUZ E FORÇA SANTA MARIA S.A.	ND	SAV. Ângelo Giuberti, 385	COLATINA	ES	SE	(27) 2101-2323	ND	https://portal.elfsm.com.br/
ELECTRICITY DISTRIBUTION	EMG	ENERGISA MINAS GERAIS	ND	Av. Astolfo Dutra, 70 - Centro	CATAGUASES	MG	SE	(32) 3421-7512	ND	https://www.energisa.com.br/
ELECTRICITY DISTRIBUTION	EMPRESA	EMPRESA DE DISTRIBUIÇÃO DE ENERGIA VALE PARANAPANEMA S.A.	2005	ND	ND	ND	ND	(32) 3202-3030	ND	https://www.energisa.com.br/
ELECTRICITY DISTRIBUTION	EMPRESA	EMPRESA ELÉTRICA BRAGANTINA S.A.	1905	R. EXPEDICIONÁRIO JOSÉ FRANCO DE MACEDO, 378 - PENHA	BRAGANÇA PAULISTA	SP	SE	(11) 4035-3113	ND	https://WWW.energisa.com.br/
ELECTRICITY DISTRIBUTION	ENERSUL	EMPRESA ENERGÉTICA DE MATO GROSSO DO SUL S.A.	ND	AV. BRASIL, 917- CENTRO	MUNDO NOVO	MS	CO	(67) 3474-1145	ND	http://www.enersul.com.br/
ELECTRICITY DISTRIBUTION	ENF	ENERGISA NOVA FRIBURGO DISTRIBUIÇÃO DE ENERGIA S.A.	1924	AV. CONSELHEIRO JÚLIUS ARP, S/N° - CENTRO	NOVA FRIBURGO	RJ	SE	(22) 2102-2500	ND	http://www.energisa.com.br/
ELECTRICITY DISTRIBUTION	EPB	ENERGISA PARAÍBA S.A.	ND	R. OSMAR DE AQUINO - CENTRO	GUARABIRA	PB	NE	0800 083 0196	ND	http://www.energisa.com.br/
ELECTRICITY DISTRIBUTION	ESE	ENERGISA SERGIPE DISTRIBUIÇÃO DE ENERGIA S.A.	ND	R. IGARASSU, S/N° - ARTUR LUNDGREN	PAULISTA	SE	NE	0800 083 0196	ND	http://www.energisa.com.br/

MAIN ENERGY COMPANIES IN BRAZIL (Cont.)

ACTIVITY	SHORT NAME	FULL NAME	START	ADDRESS	CITY	ST	REGION	PHONE	E-MAIL	WEBSITE
ELECTRICITY DISTRIBUTION	GEAM	GRUPO DE EMPRESAS ASSOCIADAS MACHADINHO	ND	ND	ND	ND	ND	ND	ND	ND
ELECTRICITY DISTRIBUTION	GRUPO	GRUPO REDE	ND	ROD. BR-230, KM. 332	ND	ND	ND	ND	ND	ND
ELECTRICITY DISTRIBUTION	HIDROPAN	HIDROELÉTRICA PANAMBI S.A.	1910	R. SETE DE SETEMBRO, 918 - CENTRO	PANAMBI	RS	S	(55) 3376-9800	ND	http://www.hidropan.com.br/
ELECTRICITY DISTRIBUTION	IGUAÇU	IGUAÇU DISTRIBUIÇÃO DE ENERGIA ELÉTRICA LTDA	1959	R. JOSÉ DE MIRANDA RAMOS, 51 - CENTRO	XANXERÊ	SC	S	(49) 3441-6300	ND	http://www.ienergia.com.br/
ELECTRICITY DISTRIBUTION	LIGHT	LIGHT SERVIÇOS DE ELETRICIDADE S.A.	1904	AV. MARECHAL FLORIANO PEIXOTO, 2º ANDAR, 168 - CENTRO	RIO DE JANEIRO	RJ	SE	(21) 2211-2814	ND	http://www.light.com.br/
ELECTRICITY DISTRIBUTION	NOVA	NOVA PALMA ENERGIA	1932	AV. VICENTE PIGATTO, 1049	FAXINAL DO SOTURNO	RS	S	(55) 3263-3800	ND	http://www.novapalmaenergia.com.br/
ELECTRICITY DISTRIBUTION	SULGIPE	COMPANHIA SUL SERGIPANA DE ELETRICIDADE	ND	R. CAPITÃO SALOMÃO, 314 - CENTRO	ESTÂNCIA	SE	NE	0800 284 9909	ND	http://www.sulgipe.com.br/
ELECTRICITY DISTRIBUTION	TRACTEBEL	TRACTEBEL ENERGIA S/A	ND	R. PAULO CLEMENTE SANTINI,S/Nº - MORRO DA NOVA CINTRA	SANTOS	SP	SE	ND	ND	http://www.tractebelenergia.com.br/
ELECTRICITY GEN., TRANSM. & DISTRIB.	RGE	RIO GRANDE ENERGIA S.A.	1997	R. MÁRIO DE BONI, 1902 - FLORESTA	CAXIAS DO SUL	RS	S	0800 970 0900	ND	https://www.rge-rs.com.br/
ELECTRICITY GENERATION	ENGIE	ENGIE BRASIL ENERGIA S.A.	ND	R. ALVARENGA PEIXOTO, 140 - VILA ANASTÁCIO	SÃO PAULO	SP	SE	ND	ND	https://www.engie.com.br/
ELECTRICITY GENERATION	CESP	COMPANHIA ENERGÉTICA DE SÃO PAULO	1966	AV. NOSSA SENHORA DO SABARÁ, 5.312	PEDREIRA	SP	SE	(11) 5613-2100	ND	http://www.cesp.com.br/
ELECTRICITY GENERATION	ELETOBRÁS	CENTRAIS ELÉTRICAS BRASILEIRAS S.A	1962	AV. PRESIDENTE VARGAS, 409	RIO DE JANEIRO	RJ	SE	(21) 2514-5151	ND	http://eletrobras.com/
ELECTRICITY GENERATION	ELETRONUCLEAR	ELETOBRÁS TERMONUCLEAR S/A	1997	Rua da Candelária, 65 – Centro	RIO DE JANEIRO	RJ	SE	(21) 2588–7000	centinf@eletronuclear.gov.br	http://www.eletronuclear.gov.br/

MAIN ENERGY COMPANIES IN BRAZIL (Cont.)

ACTIVITY	SHORT NAME	FULL NAME	START	ADDRESS	CITY	ST	REGION	PHONE	E-MAIL	WEBSITE
ELECTRICITY GENERATION	ELETROSUL	ELETROSUL CENTRAIS ELÉTRICAS S/A	1968	Rua Deputado Antônio Edu Vieira, 999	FLORIANÓPOLIS	SC	S	(48) 3231-7000	ND	http://www.eletrosul.gov.br/
NATURAL GAS DISTRIBUTION	NATURGY (CEG)	COMPANHIA DISTRIBUIÇÃO DE GÁS DO RIO DE JANEIRO	1854	AV. TORQUATO TAPAJÓS, 6100 – BAIRRO: FLORES	RIO DE JANEIRO	RJ	SE	(21) 3115-6565	ND	www.ceg.com.br
NATURAL GAS DISTRIBUTION	NATURGY (CEG RIO)	CEG RIO S/A	1854	AV. JUSCELINO KUBITSCHKE, 1327 – 15º ANDAR – VILA NOVA CONCEIÇÃO	RIO DE JANEIRO	RJ	SE	(21) 3115-6566	ND	www.ceg.com.br
NATURAL GAS DISTRIBUTION	ALGÁS	GÁS DE ALAGOAS S/A	1993	AV. PEDRO II, 68 – SÃO CRISTÓVÃO	MACEIÓ	AL	NE	(82) 3218-7700	ND	Site: www.algas.com.br
NATURAL GAS DISTRIBUTION	BAHIAGÁS	COMPANHIA DE GÁS DA BAHIA	1991	AV. PEDRO II, 68 – SÃO CRISTÓVÃO	SALVADOR	BA	NE	(71) 3206-6000/6001	ND	www.bahiagas.com.br
NATURAL GAS DISTRIBUTION	BR	PETROBRAS DISTRIBUIÇÃO S/A	1971	AV. WASHINGTON SOARES, N° 55 – 11º ANDAR – BAIRRO COCÓ	RIO DE JANEIRO	RJ	SE	(21) 3876-4085	ND	petrobras.com
NATURAL GAS DISTRIBUTION	CEGÁS	COMPANHIA DE GÁS DO CEARÁ	1993	RUA HASDRUBAL BELLEGARD, N° 1.177 – CIDADE INDUSTRIAL	FORTALEZA	CE	NE	(85) 3266-6900	ND	www.cegas.com.br
NATURAL GAS DISTRIBUTION	COMPANHIA	COMPANHIA DE GÁS DO AMAZONAS S/A	1995	AVENIDA MASCARENHAS DE MORAIS, N° 533 – BAIRRO IMBIRIBEIRA	MANAUS/AM	AM	N	(92) 3303-3213 /3200 / 0800 723 3202	comunicacao@cigas-am.com.br	www.cigas-am.com.br
NATURAL GAS DISTRIBUTION	COMPAGAS	COMPANHIA PARANAENSE DE GÁS	1994	AV. SENADOR LEMOS, 443 – SALA 1.001 – EDF. VILLAGE EXECUTIVE	CURITIBA	PR	S	(41) 3312-1900	ND	www.compagas.com.br
NATURAL GAS DISTRIBUTION	COPERGÁS	COMPANHIA PERNAMBUCANA DE GÁS	1992	R. DOS AZULÕES, N° 1 – QD. 02 – SL. 607 – JARDIM RENASCENÇA	RECIFE	PE	NE	(81) 3184-2000	ND	www.copergas.com.br
NATURAL GAS DISTRIBUTION	GASBRASILIANO	GASBRASILIANO DISTRIBUIÇÃO S/A	1998	AV. DO CONTORNO, 6594 / 10º ANDAR – LOURDE	ARARAQUARA	SP	SE	(16) 3305-1800	ND	www.gasbrasiliiano.com.br
NATURAL GAS DISTRIBUTION	COMPANHIA	COMPANHIA DE GÁS DO PARÁ	1997	Av Senador Lemos, 443 - s-1001	UMARIZAL	PA	N	(91) 3224 2799	ND	ND
NATURAL GAS DISTRIBUTION	GASMAR	COMPANHIA MARANHENSE DE GÁS	2002	AV. MIN. JOÃO ARINOS, N.º 2138 – TIRADENTES	SÃO LUÍS	MA	NE	(98) 2109-7179	ND	www.gasmar.com.br
NATURAL GAS DISTRIBUTION	GASMIG	COMPANHIA DE GÁS DE MINAS GERAIS	1952	AV. PRESIDENTE EPITÁCIO PESSOA, 4841 – TAMBAÚ	BELO HORIZONTE	MG	SE	(31)3265-1000	ND	www.gasmig.com.br

MAIN ENERGY COMPANIES IN BRAZIL (Cont.)

ACTIVITY	SHORT NAME	FULL NAME	START	ADDRESS	CITY	ST	REGION	PHONE	E-MAIL	WEBSITE
NATURAL GAS DISTRIBUTION	MSGÁS	COMPANHIA DE GÁS DO ESTADO DO MATO GROSSO DO SUL	1998	RUA ANTONIO LUZ, 255 – 4º ANDAR – CENTRO	CAMPO GRANDE	MS	CO	(67) 3312-2400	ND	www.msgas.com.br
NATURAL GAS DISTRIBUTION	PBGÁS	COMPANHIA PARAIBANA DE GÁS	1994	AVENIDA HERÁCLITO ROLLEMBERG LEITE, 2482 – CONJUNTO AUGUSTO FRANCO – BAIRRO FAROLÂNDIA	JOÃO PESSOA	PB	NE	(83) 3247-7609	ND	www.pbgas.com.br
NATURAL GAS DISTRIBUTION	POTIGÁS	COMPANHIA POTIGUAR DE GÁS	1994	AV. SETE DE SETEMBRO, 1069 – 5º ANDAR – CENTRO HISTÓRICO	NATAL	RN	NE	(84) 3204-8500	ND	www.potigas.com.br
NATURAL GAS DISTRIBUTION	SCGÁS	COMPANHIA DE GÁS DE SANTA CATARINA	1994	RUA ANTONIO LUZ, 255 – 4º ANDAR – CENTRO	FLORIANÓPOLIS	SC	S	(48) 3229-1200	ND	www.scgas.com.br
NATURAL GAS DISTRIBUTION	SERGAS	SERGIPE GÁS S/A	ND	AVENIDA HERÁCLITO ROLLEMBERG LEITE, 2482 – CONJUNTO AUGUSTO FRANCO – BAIRRO FAROLÂNDIA	ARACAJU	SE	NE	(79) 3243-8500	ND	www.sergipegas.com.br
NATURAL GAS DISTRIBUTION	SULGÁS	COMPANHIA DE GÁS DO ESTADO DO RIO GRANDE DO SUL	ND	AV. SETE DE SETEMBRO, 1069 – 5º ANDAR – CENTRO HISTÓRICO	PORTO ALEGRE	RS	S	(51) 3287-2200	ND	www.sulgas.rs.gov.br
OIL & GAS	QUEIROZ	QUEIROZ GALVÃO ÓLEO E GÁS S/A	1953	AV. PRESIDENTE ANTÔNIO CARLOS 51/ 7 º ANDAR - CENTRO	RIO DE JANEIRO	RJ	SE	(21) 3231-2500	ND	www.qgog.com.br
OIL & GAS	EQUINOR/STATOIL	EQUINOR/STATOIL DO BRASIL	2001	RUA DO RÚSSEL, 804 - GLÓRIA	RIO DE JANEIRO	RJ	SE	21) 3479-9800	ND	www.statoil.com/brazil/pt/
OIL & GAS	BG	BG DO BRASIL LTDA	ND	AV. REPÚBLICA DO CHILE, 330 - 25 º ANDAR - TORRE OESTE - CENTRO	RIO DE JANEIRO	RJ	SE	(21) 3820-8000	ND	www.bg-group.com
OIL & GAS	ESSO	ESSO	1912	AV. LAURO MÜLLER , 116 - SALA 3002 TORRE RIO SUL - BOTAFOGO	RIO DE JANEIRO	RJ	SE	(21) 2546-7700	ND	www.esso.com.br
OIL & GAS	CHEVRON	CHEVRON BRASILEIRA DE PETRÓLEO LTDA.	1879	AV. REPÚBLICA DO CHILE, 230 - 8º ANDAR - CENTRO	RIO DE JANEIRO	RJ	SE	(21) 25105900	ND	www.chevrontexaco.com
OIL & GAS	ALBACORA	ALBACORA JAPÃO PETRÓLEO LTDA.	1998	PR DO FLAMENGO, 154 - 7º ANDAR	RIO DE JANEIRO	RJ	SE	(21) 25562413	ND	ND

MAIN ENERGY COMPANIES IN BRAZIL (Cont.)

ACTIVITY	SHORT NAME	FULL NAME	START	ADDRESS	CITY	ST	REGION	PHONE	E-MAIL	WEBSITE
OIL & GAS	ANADARKO	ANADARKO EXPLORAÇÃO E PRODUÇÃO LTDA	ND	RUA VICTOR CIVITTA, 77 - BL 01/ 6º ANDAR - BARRA DA TIJUCA	RIO DE JANEIRO	RJ	SE	(21) 3043-7400	ND	www.anadarko.com
OIL & GAS	AURIZÔNIA	AURIZÔNIA PETRÓLEO LTDA	2004	AV. PRESIDENTE VARGAS, 417/ 5º ANDAR - CENTRO	RIO DE JANEIRO	RJ	SE	(21) 3505-3777	ND	www.aurizonia.com.br
OIL & GAS	BP	BP BRASIL LTDA.	2000	AV. RIO BRANCO, 1 - 10º ANDAR - CENTRO	RIO DE JANEIRO	RJ	SE	(21) 37212700	ND	www.bp.com
OIL & GAS	CARCARÁ	CARCARÁ PETRÓLEO S/A	ND	AV. ERASMO BRAGA, 227 - GR 1001 - CENTRO	RIO DE JANEIRO	RJ	SE	(21) 25324187	ND	www.carcara.com
OIL & GAS	COMPANHIA	COMPANHIA PETROLÍFERA MARLIM	ND	AV. ELIAS AGOSTINHO, 665 - BL F SALA 207 - IMBETIDA	MACAÉ	RJ	SE	(21) 2534 2219	ND	ND
OIL & GAS	DEVON	DEVON ENERGY DO BRASIL LTDA.	ND	AV. ATLÂNTICA, 1130 - 6º ANDAR - COPACABANA	RIO DE JANEIRO	RJ	SE	(21) 21272827	ND	www.devonenergy.com
OIL & GAS	EL	EL PASO ÓLEO E GÁS DO BRASIL LTDA	ND	AV. PASTEUR, 154 - BOTAFOGO	RIO DE JANEIRO	RJ	SE	(21) 2159-7600	ND	www.elpaso.com
OIL & GAS	ENGEPET	ENGEPET EMPRESA DE ENGENHARIA DE PETRÓLEO LTDA	2008	RUA MINERVINO DE SOUZA FONTES, 86 - SALGADO FILHO	ARACAJÚ	SE	NE	(79) 3246 2678	ND	www.engepet.com.br
OIL & GAS	ENI	ENI OIL DO BRASIL S/A	1999	AV. RIO BRANCO,01 - OFICINA 606 - CENTRO	RIO DE JANEIRO	RJ	SE	(21) 3082-8460	ND	www.eni.com
OIL & GAS	ERG	ERG ENGENHARIA LTDA	ND	RUA RIO GRANDE DO SUL, 1066/1º ANDAR - STº AGOSTINHO	BELO HORIZONTE	MG	SE	(31) 2138 4700	ND	www.ergbh.com.br
OIL & GAS	FRADE	FRADE JAPÃO PETRÓLEO LTDA	1999	PRAIA DO FLAMENGO, 154 /7º ANDAR PARTE - FLAMENGO	RIO DE JANEIRO	RJ	SE	(21) 2556-3600	ND	ND
OIL & GAS	HESS	HESS BRASIL PETRÓLEO LTDA	ND	PRAIA DE BOTAFOGO 501 - TORRE CORCOVADO BL B 2º ANDAR - BOTAFOGO	RIO DE JANEIRO	RJ	SE	(21) 2546-9940	ND	www.hess.com
OIL & GAS	HYDRO	HYDRO BRASIL ÓLEO E GÁS LTDA	1905	PRAIA DE BOTAFOGO, 228, 70. ANDAR, SALA 701 - BOTAFOGO	RIO DE JANEIRO	RJ	SE	(21) 3907-9400	ND	www.hydro.com
OIL & GAS	INOVSAT	INOVSAT TELECOM LTDA	ND	RUA GENERAL CALDWELL, 179 - CENTRO	RIO DE JANEIRO	RJ	SE	(21) 3233-4600	ND	www.inovsat.com.br

MAIN ENERGY COMPANIES IN BRAZIL (Cont.)

ACTIVITY	SHORT NAME	FULL NAME	START	ADDRESS	CITY	ST	REGION	PHONE	E-MAIL	WEBSITE
OIL & GAS	KOCH	KOSH PETRÓLEO DO BRASIL LTDA.	ND	RUA DA QUITANDA, 50/ 5º ANDAR - CENTRO	RIO DE JANEIRO	RJ	SE	(21) 39844000	ND	www.kochind.com
OIL & GAS	MAERSK	MAERSK OIL DO BRASIL LTDA	ND	RUA HUMAITÁ 275 – 6º E 7º ANDAR - HUMAITÁ	RIO DE JANEIRO	RJ	SE	(21) 3032-2700	ND	www.maerskoil.com
OIL & GAS	NEWFIELD	NEWFIELD BRASIL LTDA	ND	BENTO GONÇALVES, 1731 SALA 181 - PATRIA NOVA	RIO DE JANEIRO	RJ	SE	(51) 3066-4870	ND	www.newfields.com.br/
OIL & GAS	NORSE	NORSE ENERGY DO BRASIL LTDA	2005	PRAIA DE BOTAFOGO 228 SL 801 - BOTAFOGO	RIO DE JANEIRO	RJ	SE	(21) 3078-7475	ND	www.norseenergycorp.com
OIL & GAS	DOMMO	DOMMO ENERGIA	ND	RUA LAURO MULLER, 116 – 38º ANDAR (SALAS 3802 A 3804) - BOTAFOGO	RIO DE JANEIRO	RJ	SE	(21) 2196-4606	ND	dommoenergia.com.br/
OIL & GAS	ORTENG	ORTENG EQUIPAMENTOS E SISTEMAS LTDA	1977	VIA EXPRESSA DE CONTAGEM, 3850 - CINÇÃO	CONTAGEM	MG	SE	(31) 3399-6600	ND	www.orteng.com.br
OIL & GAS	OURO	OURO PRETO PETRÓLEO E GÁS	2010	RUA VISCONDE DE OURO PRETO, 5 - SALA 601 E SALA 701 - BOTAFOGO	RIO DE JANEIRO	RJ	SE	(21) 2145-5555	ND	www.opog.com.br/
OIL & GAS	PAN	PAN AMERICAN ENERGY DO BRASIL LTDA	ND	AV. BRIGADEIRO LIMA 3729/ 2º ANDAR	SÃO PAULO	SP	SE	(11) 3170-3180	ND	www.pan-energy.com
OIL & GAS	PANERGY	PANERGY PETRÓLEO E GÁS LTDA	ND	RUA RUBENS GUELLI, 134 - EMPRESARIAL ITAIGARA, SALA 108 - ITAGARA	SALVADOR	BA	NE	(71) 3263-1790	ND	www.panergy.com.br
OIL & GAS	PETRORECONCAVO	PETRORECONCAVO S/A	ND	ESTRADA DO VINTE MIL KM 3,5 - ESTAÇÃO SÃO ROQUE - MATA DE SÃO JOÃO	MATA DE SÃO JOÃO	BA	NE	(71) 3635-0200	ND	www.petroreconcavo.com.br
OIL & GAS	PETROSERV	PETROSERV	1979	AV. ALMIRANTE BARROSO, 52/ 7º ANDAR - CENTRO	RIO DE JANEIRO	RJ	SE	(21) 2220-3284	ND	ND
OIL & GAS	PETROSYNERGY	PETROSYNERGY LTDA	2000	RUA ALMIRANTE BARROSO, 52/ 34º ANDAR - CENTRO	RIO DE JANEIRO	RJ	SE	(21) 3202-1200	ND	www.petrosynergy.com.br
OIL & GAS	QUANTRA	QUANTRA PETRÓLEO LTDA	ND	RUA MANOEL MACHADO, 322 - PETRÓPOLIS	NATAL	RN	NE	(84) 4008-5500	ND	ND
OIL & GAS	SEVERO	SEVERO VILLARES PROJETOS E CONSTRUÇÕES S/A	ND	RUA IGUATEMI, 448 2. ANDAR CJ. 202	SÃO PAULO	SP	SE	(11) 2626-7126	ND	www.severovillares.com.br
OIL & GAS	SILVER	SILVER MARLIN EXPLORAÇÃO E PRODUÇÃO DE PETRÓLEO E GÁS LTDA	2005	AV. RIO BRANCO, 147/ 2º ANDAR - CENTRO	RIO DE JANEIRO	RJ	SE	(21) 2224-2983	marlinoilgas@marlinoilgas.com	www.marlinoilgas.com

MAIN ENERGY COMPANIES IN BRAZIL (Cont.)

ACTIVITY	SHORT NAME	FULL NAME	START	ADDRESS	CITY	ST	REGION	PHONE	E-MAIL	WEBSITE
OIL & GAS	SINALMIG	SINALMIG SINAIS SISTEMAS E PROGRAMAÇÃO VISUAL	ND	AV. CDOR FCO ALVES QUINTAS, 175 - DISTR. INDUSTRIAL	SARZEDO	MG	SE	(31) 3503-4000	sinalmig@sinalmig.com.br	www.sinalmig.com.br
OIL & GAS	SONANGOL	SONANGOL PESQUISA & PRODUÇÃO DO BRASIL LTDA	1976	RUA DA ASSEMBLÉIA, 98/ 18º ANDAR	RIO DE JANEIRO	RJ	SE	(21) 2507-0308	candido.cardoso@sonangol.com.br	www.sonangol.com.br
OIL & GAS	STARFISH	STARFISH OIL&GAS S/A	1999	AV.RIO BRANCO, 01/ 15º ANDAR - GR 1506 - CENTRO	RIO DE JANEIRO	RJ	SE	(21) 3232-8500	contato@starfish-oilgas.com.br	www.starfish-oilgas.com.br
OIL & GAS	TAMAR	TAMAR ENERGIA E PARTICIPAÇÕES LTDA	ND	AV.ALMTE BARROSO, 63/ 7º ANDAR - SALA 702 - CENTRO	RIO DE JANEIRO	RJ	SE	(21) 2262-4444	ubx@ubx.com.br	www.ubx.com.br
OIL & GAS	TOTAL	TOTAL E&P DO BRASIL LTDA	ND	PRAIA DO FLAMENGO, 154 / 9 º ANDAR - FLAMENGO	RIO DE JANEIRO	RJ	SE	(21) 2102-9000	ND	www.total.com
OIL & GAS	W	W WASHINGTON EMPREENDIMENTOS E PARTICIPAÇÕES LTDA	ND	PRAÇA PROFESSOR JOSÉ LANNES, 40 CJ 61	SÃO PAULO	SP	SE	(11) 2188-2550	wwashington@wwashington.com	www.wwashington.com.br
PETROCHEMISTRY	ACRINOR	ACRINOR-ACRILONITRILA DO NORDESTE S/A	1973	RUA HIDROGÊNIO 824 - PÓLO PETROQUÍMICO	CAMAÇARI	BA	NE	(71) 3634-2455	jorge.almeida@unigel.com.br	www.acrinor.com.br
PETROCHEMISTRY	CARBOCLORO	CARBOCLORO S/A INDÚSTRIAS QUÍMICAS	1969	AVENIDA PRESIDENTE JUSCELINO KUBITSCHKE, 1327 - 22º ANDAR	SÃO PAULO	SP	SE	(11) 3704-4200	marketing@carbocloro.com.br	www.uniparcarbocloro.com.br
PETROCHEMISTRY	COPENOR	COPENOR COMPANHIAS PETROQUÍMICA DO NORDESTE	1979	RUA ETENO, 1042/1242	CAMAÇARI	BA	NE	(71) 3632-9203	ouvidoria@copenor.com.br	www.copenor.com.br
PETROCHEMISTRY	COPELUL	COPELUL COMPANHIA PETROQUÍMICA DO SUL S/A	1982	BR 386 ROD TABAÍ - CANOAS KM 419	TRIUNFO	RS	S	(51) 3457-6000	ND	www.copelul.com.br/
PETROCHEMISTRY	DETEN	DETEN QUÍMICA S/A	ND	RUA HIDROGÊNIO 1744 - COMPLEXO INDUSTRIAL DE CAMAÇARI (COPEC)	CAMAÇARI	BA	NE	(71) 3634-3000	fala@deten.com.br	www.deten.com.br
PETROCHEMISTRY	DUPONT	DUPONT DO BRASIL S/A	ND	ALAMEDA ITAPECURU, 506 - ALPHAVILLE	BARUERI	SP	SE	(11) 4166-8000	dupont@dupont.com.br	www.dupont.com.br
PETROCHEMISTRY	ELEKEIROZ	ELEKEIROZ S/A	1989	RUA EDGARDO DE AZEVEDO SOARES, 392 - CENTRO	VÁRZEA PAULISTA	SP	SE	(11) 4596-8800	elekeiroz@elekeiroz.com.br	www.elekeiroz.com.br
PETROCHEMISTRY	EVONIK	EVONIK DEGUSSA BRASIL LTDA	2007	ALAMEDA CAMPINAS 579/ 3º AO 12º ANDAR - JARDIM PAULISTA	SÃO PAULO	SP	SE	(11) 3146-4100	ND	www.evonik.com.br

MAIN ENERGY COMPANIES IN BRAZIL (Cont.)

ACTIVITY	SHORT NAME	FULL NAME	START	ADDRESS	CITY	ST	REGION	PHONE	E-MAIL	WEBSITE
PETROCHEMISTRY	FÀBRICA	FÁBRICA DE FERTILIZANTES NITROGENADOS	1970	RUA ETENO, 2198 - COMPLEXO PETROQUÍMICO	CAMAÇARI	BA	NE	(71) 3642-4701	ND	www.petrobras.com.br4
PETROCHEMISTRY	GULF	GULF BRASIL	ND	RUA NOVE DE JULHO, L 224 - CENTRO	PERDENEIRAS	SP	SE	(11) 2421-3250	novagulf@gulfbrasil.com.br	www.gulfbrasil.com.br
PETROCHEMISTRY	HYDRATIGHT	HYDRATIGHT EQUIPAMENTOS E SERVIÇOS LTDA	1975	AVENIDA NOSSA SENHORA DA GLÓRIA, 386 ED. CENTRO DE NEGÓCIOS DE MACAÉ SALA 301 - PRAIA CAMPISTA	MACAÉ	RJ	SE	(22) 3081 1447	southamerica@hydratight.com	www.hydratight.com
PETROCHEMISTRY	KTY	KTY ENGENHARIA LTDA	1986	AV. PAULISTA, 453 1º E 2º ANDARES - BELA VISTA	SÃO PAULO	SP	SE	(11) 5080-1600	comercialkty@kty.com.br	www.kty.com.br
PETROCHEMISTRY	OXITENO	OXITENO S.A. INDÚSTRIA E COMÉRCIO	1970	AV. BRIGADEIRO LUÍS ANTÔNIO, 1343 – 10º ANDAR – ALA C - BELA VISTA	SÃO PAULO	SP	SE	(11) 3177-6102	oxiteno@oxiteno.com	www.oxiteno.com.br
PETROCHEMISTRY	TRIUNFO	PETROQUÍMICA TRIUNFO S/A	1979	AV. DAS NAÇÕES UNIDAS, 8501 - EDIFÍCIO ELDORADO BUSINESS TOWER - PINHEIROS	SÃO PAULO	SP	SE	(11) 3643-2950	amanda.moscardini@cdn.com.br	www.ptriunfo.com.br
PETROCHEMISTRY	PETROQUISA	PETROQUISA	1967	AV. REPÚBLICA DO CHILE 65 - SALA 903 - CENTRO	RIO DE JANEIRO	RJ	SE	(21) 3224-6397	biblioteca.ptquisa@petrobras.com.br	www.petrobras.com.br
PETROCHEMISTRY	POLITENO	POLITENO INDÚSTRIA E COMÉRCIO S/A	1978	RUA BENZENO 2391 - COPEC	CAMAÇARI	BA	NE	(71) 3632-4444	web@braskem.com.br	www.braskem.com.br
PETROCHEMISTRY	QUATTOR	QUATTOR PARTICIPAÇÕES S/A	2008	RUA BUENOS AIRES, 15, 9º E 10º ANDAR - EDIFÍCIO BUENOS AIRES CORPORATE	RIO DE JANEIRO	RJ	SE	(21) 2157-7760	web@braskem.com.br	www.braskem.com.br
PETROCHEMISTRY	TECNO	TECNO QUÍMICA S/A	ND	RODOVIA PRESIDENTE DUTRA, 2254	RIO DE JANEIRO	RJ	SE	(21) 2138-3050	reflex@reflex.com.br	www.reflex.com.br
PETROCHEMISTRY	THORIUM	THORIUM INSTRUMENTOS ANALÍTICOS LTDA	2002	AV. JOSÉ PEDRO DE OLIVEIRA, 177 - JARDIM AMÉRICA	PAULÍNIA	SP	SE	(19) 3833-4062	vendas.rj@thorium.com.br	www.thorium.com.br
PETROCHEMISTRY	UMICORE	UMICORE BRASIL LTDA	2003	RUA BARÃO DO RIO BRANCO, 368 - ITAPEGICA	GUARULHOS	SP	SE	(11) 2421-1000	ND	www.umicore.com.br
PETROCHEMISTRY	UNIPAR	UNIÃO DE INDÚSTRIAS PETROQUÍMICAS	1969	RUA ARAÚJO PORTO ALEGRE, 36/ 4º ANDAR - CASTELO	RIO DE JANEIRO	RJ	SE	(21) 2128-5700	unipar@unipar.ind.br	www.unipar.ind.com
REFINERIES	FAFEN-BA	FÁBRICA DE FERTILIZANTES NITROGENADOS	1970	RUA ETENO, 2198 - COMPLEXO PETROQUÍMICO	CAMAÇARI	BA	NE	(71) 3642-4770	ND	www.petrobras.com.br

MAIN ENERGY COMPANIES IN BRAZIL (Cont.)

ACTIVITY	SHORT NAME	FULL NAME	START	ADDRESS	CITY	ST	REGION	PHONE	E-MAIL	WEBSITE
REFINERIES	LUBNOR	LUBRIFICANTES E DERIVADOS DE PETRÓLEO DO NORDESTE	1966	AV. LEITE BARBOSA S/Nº - MUCURIPE	FORTALEZA	CE	NE	(85) 3266-3211	ND	www.petrobras.com.br
REFINERIES	RECAP	REFINARIA DE CAPUAVA	1954	AV. ALBERTO SOARES SAMPAIO, 2122-A - CAPUAVA	MAUÁ	SP	SE	(11) 3795-9000	ND	www.petrobras.com.br
REFINERIES	REDUC	REFINARIA DUQUE DE CAXIAS	1961	RODOVIA WASHINGTON LUIZ, KM 113,7 - CAMPOS ELISEOS	DUQUE DE CAXIAS	RJ	SE	(21) 2677-2231	ND	www.petrobras.com.br
REFINERIES	REFAP	REFINARIA ALBERTO PASQUALINI	1968	AV. GETÚLIO VARGAS, 11001 - SÃO JOSÉ	CANOAS	RS	S	(51) 3415-2000	ND	www.petrobras.com.br
REFINERIES	REGAP	REFINARIA GABRIEL PASSOS	1958	AV. REFINARIA GABRIEL PASSOS, 690 - DISTRITO INDUSTRIAL PAULO CAMILO SUL	BETIM	MG	SE	(31) 3529-4000	ND	www.petrobras.com.br
REFINERIES	REMAN	REFINARIA ISAAC SABBÁ	1956	RUA RIO QUIXITO, 1, VILA BURITI - DISTRITO INDUSTRIAL	MANAUS	AM	N	(92) 3616-4195	ND	www.petrobras.com.br
REFINERIES	REPAR	REFINARIA PRES. GETÚLIO VARGAS	1971	RODOVIA DO XISTO BR 476 - KM 16	ARAUCÁRIA	PR	S	(41) 3641-2020	ND	www.petrobras.com.br
REFINERIES	RLAM	REFINARIA LANDULPHO ALVES	1950	RODOVIA BA 523 - KM 04 - MATARIPE	SÃO FRANCISCO DO CONDE	BA	NE	(71) 3604-2911	ND	www.petrobras.com.br
REFINERIES	RPBC	REFINARIA PRES. BERNARDES	1955	AV. 9 DE ABRIL, 777 - JD. DAS INDÚSTRIAS	CUBATÃO	SP	SE	(13) 3328-4004	ND	www.petrobras.com.br

Note: ND = *Não Disponível* (Not Available).

MAIN R&D INSTITUTIONS IN BRAZIL

ACTIVITY	SHORT NAME	FULL NAME	START	ADDRESS	CITY	ST	PHONE	E-MAIL	WEBSITE	HOME INSTITUTION
ELECTRICITY	CEAMAZON	CENTRO DE EXCELÊNCIA EM EFICIÊNCIA ENERGÉTICA DA AMAZÔNIA	2006	PARQUE DE CIÊNCIA E TECNOLOGIA DO GUAMÁ - AVENIDA PERIMETRAL 2651, PRÉDIO 01.	BELÉM	PA		ceamazonufpa@gmail.com	http://www.ceamazon.com.br/	UNIVERSIDADE FEDERAL DO PARÁ - UFPA
ELECTRICITY & RENEWABLE ENERGY GENERATION	CEAR	CENTRO DE ENERGIAS ALTERNATIVAS E RENOVÁVEIS	2011	CIDADE UNIVERSITÁRIA CAIXA POSTAL 5115	JOÃO PESSOA	PB	(83) 3216-7268		http://www.cear.ufpb.br/	UNIVERSIDADE FEDERAL DA PARAÍBA (UFPB)
BIOFUELS	GBIO	INSTITUTO DE ENERGIA E AMBIENTE/GRUPO DE PESQUISA EM BIOENERGIA	2015	AVENIDA PROFESSOR LUCIANO GUALBERTO, 1289 - CIDADE UNIVERSITÁRIA	SÃO PAULO	SP	(11) 3091-2652	suani@iee.usp.br	http://www.iee.usp.br/gbio/	UNIVERSIDADE DE SÃO PAULO (USP)
ELECTRICITY	INEP	INSTITUTO DE ELETRÔNICA DE POTÊNCIA		CAMPUS UNIVERSITÁRIO, S/N -	FLORIANÓPOLIS	SC	(48) 3721-7464	secretaria@inep.ufsc.br	inep.sites.ufsc.br/	UNIVERSIDADE FEDERAL DE SANTA CATARINA (UFSC)
WIND AND SOLAR GENERATION	LAFAE	LABORATÓRIO DE FONTES ALTERNATIVAS DE ENERGIA		DEPARTAMENTO DE ENGENHARIA ELÉTRICA – ESCOLA POLITÉCNICA; UNIVERSIDADE FEDERAL DO RIO DE JANEIRO – UFRJ; CENTRO DE TECNOLOGIA - BLOCO I – SALAS I152 E I154; ILHA DO FUNDÃO ; CAIXA POSTAL: 68515	RIO DE JANEIRO	RJ	(21) 2562.8032 e 2562.8029	jorge@dee.ufrj.br rolim@ufrj.br	http://www.pee.ufrj.br	UFRJ
WIND, SOLAR & HYDRO GENERATION	LEREA	LABORATÓRIO DE ENERGIAS RENOVÁVEIS E ESTUDOS AMBIENTAIS		CENTRO DE TECNOLOGIA, BLOCO I, SALA 21; CIDADE UNIVERSITÁRIA;	RIO DE JANEIRO	RJ	21 3938-8760	arouca@ppe.ufrj.br	http://www.coppe.ufrj.br	UFRJ
ELECTRICITY	LESGN	LABORATÓRIO DE ENERGIA SOLAR E GÁS NATURAL	1994	CAMPUS DO PICI - BLOCO 714	FORTALEZA	CE	(85) 3366-9632/9635	dem@ufc.br	http://www.dem.ufc.br/	UNIVERSIDADE FEDERAL DO CEARÁ
SOLAR ENERGY	ND	GRUPO DE PESQUISA ESTRATÉGICA EM ENERGIA SOLAR - FOTOVOLTAICA		AV LUIZ BOITEUX PIAZA, 1302, LOTES 114/115	FLORIANÓPOLIS	SC	(48) 3721-4598	fvufsc@gmail.com	http://fotovoltaiica.ufsc.br	UFSC

MAIN R&D INSTITUTIONS IN BRAZIL (Cont.)

ACTIVITY	SHORT NAME	FULL NAME	START	ADDRESS	CITY	ST	PHONE	E-MAIL	WEBSITE	HOME INSTITUTION
SOLAR ENERGY	ND	LABORATÓRIO DE SISTEMAS FOTOVOLTAICOS		AVENIDA PROFESSOR LUCIANO GUALBERTO, 1289 - CIDADE UNIVERSITÁRIA	SÃO PAULO	SP	(11) 3091-2500	contato@iee.usp.br	http://lsf.iee.usp.br/	INSTITUTO DE ENERGIA E AMBIENTE DA UNIVERSIDADE DE SÃO PAULO (USP)
WIND ENERGY	ND	LABORATÓRIO DE ENERGIA EÓLICA		CAMPUS DO PICI - BLOCO 705, CAIXA POSTAL 6001	FORTALEZA	CE	(85)3366-9582	almeida@dee.ufc.br	http://www.dee.ufc.br	UFC
ELECTRICITY	NIEPE	NÚCLEO INTERDISCIPLINAR DE ESTUDOS EM PLANEJAMENTO ENERGÉTICO	1999	AV. FERNANDO CORRÊA DA COSTA, Nº 2367 - BAIRRO BOA ESPERANÇA	CUIABÁ	MT	(65) 3615-8000		www.ufmt.br/niepe/	UNIVERSIDADE FEDERAL DE MATO GROSSO (UFMT)
ELECTRICITY	CENERGIA	CENTRO DE ECONOMIA ENERGÉTICA E AMBIENTAL		BLOCO I, SALA I-034, DO CENTRO DE TECNOLOGIA – CIDADE UNIVERSITÁRIA	RIO DE JANEIRO	RJ	55 21 3938-8775	roberto@ppe.ufrj.br	http://www.coppe.ufrj.br	UNIVERSIDADE FEDERAL DO RIO DE JANEIRO (UFRJ)
FUELS (GENERAL)	CENPES	CENTRO DE PESQUISA DA PETROBRAS	1963	AV. HORÁRIO MACEDO, 950 ILH CIDADE UNIVERSITÁRIA - CIDADE UNIVERSITÁRIA	RIO DE JANEIRO	RJ	(21) 3224-4477		https://pt-br.facebook.com/cenpes/	
BIOFUELS	CETENE	CENTRO DE TECNOLOGIAS ESTRATÉGICAS DO NORDESTE	2005	AV. PROF. LUÍS FREIRE, 1 - CIDADE UNIVERSITÁRIA	RECIFE	PE	(81) 3334.7200	ascom@cetene.gov.br	http://www.cetene.gov.br	UNIVERSIDADE FEDERAL DE PERNAMBUCO (UFPE)
FUELS (GENERAL)	EXCEN	CENTRO DE EXCELÊNCIA EM EFICIÊNCIA ENERGÉTICA		AV. BPS, 1303, BAIRRO PINHEIRINHO	ITAJUBÁ	MG				UNIVERSIDADE FEDERAL DE ITAJUBÁ (UNIFEI)
ELECTRICITY	BATLAB	LABORATÓRIO DE PESQUISA E DESENVOLVIMENTO	2002	AV. SEN. FILINTO MÜLER, 1555 - VILA IPIRANGA, CEP 79074-460	CAMPO GRANDE	MS	(67) 3345-7543	leandro@batlab.ufms.br	www.batlab.ufms.br	UNIVERSIDADE FEDERAL DE MATO GROSSO DO SUL (UFMS)
WIND ENERGY	CE-EÓLICA	CENTRO DE ENERGIA EÓLICA	2007	AV. IPIRANGA, 6681 PARTENON	PORTO ALEGRE	RS	(51) 3320.3500		http://www.pucrs.br/ce-eolica/	PONTIFÍCIA UNIVERSIDADE CATÓLICA DO RIO GRANDE DO SUL

MAIN R&D INSTITUTIONS IN BRAZIL (Cont.)

ACTIVITY	SHORT NAME	FULL NAME	START	ADDRESS	CITY	ST	PHONE	E-MAIL	WEBSITE	HOME INSTITUTION
NUCLEAR ENERGY	CEN	CENTRO DE ENGENHARIA NUCLEAR	1970	AV. LINEU PRESTES, 2242, CIDADE UNIVERSITÁRIA, BUTANTÃ	SÃO PAULO	SP	(11) 3133-9425	cen@ipen.br	https://www.ipen.br	UNIVERSIDADE DE SÃO PAULO (USP)
BIOFUELS	CIBIOGÁS	CENTRO INTERNACIONAL DE ENERGIAS RENOVÁVEIS-BIOGÁS	2011	AV. TANCREDO NEVES, 6731 EDIFÍCIO DAS ÁGUAS - SALA 11 - PARQUE TECNOLÓGICO ITAIPU	FOZ DO IGUAÇU	PR	(45) 3576-7166	cibiogas@cibiogas.org	https://www.cibiogas.org/	UNIVERSIDADE FEDERAL DA INTEGRAÇÃO LATINO-AMERICANA (UNILA)
FUELS (GENERAL)	COPPECOMB	CENTRO DE PESQUISAS E CARACTERIZAÇÃO DE PETRÓLEO E COMBUSTÍVEIS	2007	AV. PEDRO CALMON S/N, PRÉDIO ANEXO DA QUÍMICA, CENTRO DE TECNOLOGIA – CIDADE UNIVERSITÁRIA	RIO DE JANEIRO	RJ	(21) 3938-7150	coppecomb@peq.coppe.ufrj.br	http://coppecomb.coppe.ufrj.br	UNIVERSIDADE FEDERAL DO RIO DE JANEIRO - COPPE
BIOFUELS	CPQBA	CENTRO PLURIDISC.DE PESQ.QUÍMICAS,BIOLÓGIAS E AGRÍCOLAS		AV. ALEXANDRE CAZELATTO, 999, BAIRRO VILA BETEL	CAMPINAS	SP	(19) 2139-2850	cenpesq@cpqba.unicamp.br	https://www.cpqba.unicamp.br	UNIVERSIDADE DE CAMPINAS (UNICAMP)
BIOFUELS	CTBE	LABORATÓRIO NACIONAL DE CIÊNCIA E TECNOLOGIA DO BIOETANOL	2005	RUA GIUSEPPE MÁXIMO SCOLFARO, 10.000 – BAIRRO GUARÁ	CAMPINAS	SP	(19) 3512-1010		http://ctbe.cnpem.br/	
GAS, SOLAR, WIND AND HYDRO	CTGAS-ER	CENTRO DE TECNOLOGIAS DO GÁS E ENERGIAS RENOVÁVEIS	1999	AV. CAPITÃO-MOR GOUVEIA, 2770, LAGOA NOVA	NATAL	RN	(84)3204-8090	ctgas@ctgas.com.br	http://www.ctgas.com.br	
NUCLEAR ENERGY	CTMSP	CENTRO TECNOLÓGICO DA MARINHA EM SÃO PAULO	1986	AVENIDA PROFESSOR LINEU PRESTES, 2468, CIDADE UNIVERSITÁRIA - BUTANTÃ	SÃO PAULO	SP	(15) 3229-8100		https://www.marinha.mil.br/ctmsp/	
ELECTRICITY	ENERQ	CENTRO DE ESTUDOS EM REGULAÇÃO E QUALIDADE DE ENERGIA		AV. PROF. LÚCIO MARTINS RODRIGUES, 380	SÃO PAULO	SP	(11) 3091-5317	enerq@pea.usp.br	http://www.pea.usp.br/enerq	UNIVERSIDADE DE SÃO PAULO (USP)
ELECTRICITY	GEDAE	GRUPO DE ESTUDOS E DESENVOLVIMENTO DE ALTERNATIVAS ENERGÉTICAS	1994	AG.JURUNAS	BELÉM	PA	(91) 3201-7299/8806/802/8804/8809	camila.ara06@gmail.com / gedae@ufpa.br	http://www.gedae.ufpa.br/	UNIVERSIDADE FEDERAL DO PARÁ (UFPA)
FUELS (GENERAL)	GEMA	GRUPO DE ESTUDOS EM MATERIAIS	2000	AV. DR. MAURÍCIO CARDOSO, 510	NOVO HAMBURGO	RS	(51) 3586-8800		https://www.feevale.br	UNIVERSIDADE FEEVALE

MAIN R&D INSTITUTIONS IN BRAZIL (Cont.)

ACTIVITY	SHORT NAME	FULL NAME	START	ADDRESS	CITY	ST	PHONE	E-MAIL	WEBSITE	HOME INSTITUTION
ELECTRICITY	GEPEA	GRUPO DE ENERGIA		AV. PROF. LUCIANO GUALBERTO, TRAVESSA 3, Nº 158	SÃO PAULO	SP	(11) 3091-5349	gepea@pea.usp.br	http://www.pea.usp.br	UNIVERSIDADE DE SÃO PAULO (USP)
ELECTRICITY	GESEP	GERÊNCIA DE ESPECIALISTAS EM SISTEMAS ELÉTRICOS DE POTÊNCIA	2010	AV. PH ROLFS, S/N	VIÇOSA	MG			http://www.gesep.ufv.br/	UNIVERSIDADE FEDERAL DE VIÇOSA
ELECTRICITY	GMACQ	GRUPO DE MÁQUINAS E ACIONAMENTOS ELÉTRICOS		AV. PROF. LUCIANO GUALBERTO, TRAVESSA 3, Nº 158	SÃO PAULO	SP	(11) 3091-9809		http://www.pea.usp.br/Gmacq/	UNIVERSIDADE DE SÃO PAULO (USP)
ELECTRICITY	GPAER	GPAER - GRUPO DE PESQUISA APLICADA EM ENERGIAS RENOVÁVEIS	2014	AV. SÃO VICENTE, 78 - CINQUENTENÁRIO	FARROUPILHA	RS	(54) 3260-2400	alexandre.buhler@farroupilha.ifrs.edu.br	http://dgp.cnpq.br	IFRS
ELECTRICITY	GPEC	GRUPO DE PROCESSAMENTO DE ENERGIA E CONTROLE		CAMPUS DO PICI - BLOCO 705, CAIXA POSTAL 6001	FORTALEZA	CE	(85)3366-9581	fantunes@dee.ufc.br	http://www.dee.ufc.br	UFC
WIND AND SOLAR ENERGY	GREEN PUC	GRUPO DE ESTUDOS EM ENERGIA	1997	AV. DOM JOSÉ GASPAR, 500. PRÉDIO 50. ACESSO 10. CORAÇÃO EUCARÍSTICO	BELO HORIZONTE	MG	(31) 3319-4387	green-sec@pucminas.br	http://www.pucminas.br/green	PONTIFÍCIA UNIVERSIDADE CATÓLICA DE MINAS GERAIS - PUC
ELECTRICITY	INCT-GD	GERAÇÃO DISTRIBUÍDA DE ENERGIA ELÉTRICA	2014	AV. RORAIMA, 1000 CIDADE UNIVERSITÁRIA	SANTA MARIA	RS	(55) 3220-8000	inct@ufsm.br	http://inctgd.ufsm.br	UFSM
NUCLEAR ENERGY	IPEN	INSTITUTO DE PESQUISAS ENERGÉTICAS E NUCLEARES		AVENIDA LINEU PRESTES, 2242	SÃO PAULO	SP	(11) 3133-9000	efonseca@ipen.br / kitioka@ipen.br	www.ipen.br/	GOVERNO DO ESTADO DE SÃO PAULO / UNIVERSIDADE DE SÃO PAULO (USP)
FUELS (GENERAL)	IPT	INSTITUTO DE PESQUISAS TECNOLÓGICAS		AV. PROF. ALMEIDA PRADO 532 CID. UNIVERSITÁRIA	SÃO PAULO	SP	(11) 3767-4456 /4091 /4744		https://www.ipt.br	
ELECTRICITY	LAB EEE	LABORATÓRIO DE EFICIÊNCIA ENERGÉTICA EM EDIFICAÇÕES	1996	CAMPUS UNIVERSITÁRIO REITOR JOÃO DAVID FERREIRA LIMA	FLORIANÓPOLIS	SC	(48) 3721-5184			UFSC
ELECTRICITY	LABELO	LABORATÓRIOS ESPECIALIZADOS EM ELETROELETRÔNICA	1966	AV. IPIRANGA 6681 PRÉDIO 30, BLOCO A, SALA 210 PARTENON	PORTO ALEGRE	RS	(51) 3320.3551	labelo@puhrs.br	http://www.puhrs.br/labelo/	PUCRS

MAIN R&D INSTITUTIONS IN BRAZIL (Cont.)

ACTIVITY	SHORT NAME	FULL NAME	START	ADDRESS	CITY	ST	PHONE	E-MAIL	WEBSITE	HOME INSTITUTION
ELECTRICITY	LABENS	LABENS - LABORATÓRIO DE ENERGIA SOLAR			CURITIBA	PR		urbanetz@utfpr.edu.br	http://labens.ct.utfpr.edu.br/	UTFPR
RENEWABLE ENERGY GENERATION	LABFONTES	LABORATÓRIO DE FONTES RENOVÁVEIS DE ENERGIA	2001		BRASILIA	DF			http://labfontes.ene.unb.br	UNB
BIOFUELS	LABIOUFU	LABORATÓRIO DE BIOCOMBUSTÍVEIS		AV. JOÃO NAVES DE ÁVILA, 2121 CAMPUS SANTA MÔNICA - BLOCO 30	UBERLÂNDIA	MG	(34) 3239-4439		http://www.iq.ufu.br/node/97	UNIVERSIDADE FEDERAL DE UBERLÂNDIA (UFU)
FUELS (GENERAL)	LABIPETRO	LABORATÓRIO DE ANÁLISE DE BIOCOMBUSTÍVEIS E DERIVADOS DE PETRÓLEO		RUA HÉLIO DE ALMEIDA, Nº 40, SALA B – 102 CIDADE UNIVERSITÁRIA	RIO DE JANEIRO	RJ	(21) 2590-0990	jussara@iq.ufrj.br	https://www.iq.ufrj.br	UNIVERSIDADE FEDERAL DO RIO DE JANEIRO (UFRJ)
ELECTRICITY	LABOCEANO	LABORATÓRIO DE TECNOLOGIA OCEÂNICA		PARQUE TECNOLÓGICO DA UFRJ – RUA PAULO EMÍDIO BARBOSA, 485, QUADRA 7-A	RIO DE JANEIRO	RJ	(21) 3867-6768	comercial@laboceano.coppe.ufrj.br	http://www.laboceano.coppe.ufrj.br	UNIVERSIDADE FEDERAL DO RIO DE JANEIRO - COPPE
ELECTRICITY	LABQUALI	LABORATÓRIO DE QUALIDADE DE ENERGIA ELÉTRICA		CAMPUS UNIVERSITÁRIO DO BACANGA – AVENIDA DOS PORTUGUESES S/N	SÃO LUIS	MA			http://www.pggee.ufma.br	UNIVERSIDADE FEDERAL DO MARANHÃO (UFMA)
ELECTRICITY	LABREN	LABORATORIO DE MODELAGEM E ESTUDOS DE RECURSOS RENOVÁVEIS DE ENERGIA		AV. DOS ASTRONAUTAS, 1758 - SÃO JOSÉ DOS CAMPOS	SÃO JOSÉ DOS CAMPOS	SP	12 3208-7908	labren@inpe.br	http://labren.ccst.inpe.br/index.html	
OIL & GAS	LABSAR	LABORATÓRIO DE SENSORIAMENTO REMOTO POR RADAR APLICADO À INDÚSTRIA DO PETRÓLEO	2000	CENTRO DE TECNOLOGIA - BLOCO I - SALA 114, AV. ATHOS DA SILVEIRA RAMOS, 149, CIDADE UNIVERSITÁRIA	RIO DE JANEIRO	RJ	(21) 3938-8433		http://www.labsar.coppe.ufrj.br/	UNIVERSIDADE FEDERAL DO RIO DE JANEIRO - COPPE
ELECTRICITY	LABSOL	LABORATÓRIO DE ENERGIA SOLAR		RUA SARMENTO LEITE, 425	PORTO ALEGRE	RS	(051) 3308-6841 / 3308-7836	arno@mecanica.ufrgs.br	http://www.solar.ufrgs.br/	UNIVERSIDADE FEDERAL DO RIO GRANDE DO SUL (UFRGS)

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ACTIVITY	SHORT NAME	FULL NAME	START	ADDRESS	CITY	ST	PHONE	E-MAIL	WEBSITE	HOME INSTITUTION
SOLAR ENERGY	LABSOLAR	LABORATÓRIO DE CERTIFICAÇÃO DE COMPONENTES DE SISTEMAS DE ENERGIA SOLAR FOTOVOLTAICA	2017	RUA MUNDO, Nº 121. TECNOCENTRO. TROBOGY	SALVADOR	BA	(71)3367-7088	labsolar@ufbs.br	http://www.labsolar.ufba.br/	UFBA
ELECTRICITY	LABSPOT	LABORATÓRIO DE SISTEMAS DE POTÊNCIA		CAMPUS UNIVERSITÁRIO JOÃO DAVID FERREIRA LIMA – TRINDADE	FLORIANÓPOLIS	SC	(48) 3721-2372	labspot@contato.ufsc.br	http://labspot.paginas.ufsc.br	UNIVERSIDADE FEDERAL DE SANTA CATARINA (UFSC)
THERMAL ENERGY	LABTERM	LABORATÓRIO DE TERMOMETRIA		AVENIDA ANTÔNIO CARLOS, 6627 - PAMPULHA	BELO HORIZONTE	MG	(31) 3409-3510	matheusporto@ufmg.br	https://www.labterm.com.br	UNIVERSIDADE FEDERAL DE MINAS GERAIS - UFMG
FUELS (GENERAL)	LAC	LABORATÓRIO DE COMBUSTÍVEIS	2000	AVENIDA PROFº ARTHUR DE SÁ, S/N	RECIFE	PE	(81) 2126-7235	contato.lac@ufpe.br	https://www3.ufpe.br/lac/index.php	UNIVERSIDADE FEDERAL DE PERNAMBUCO (UFPE)
FUELS (GENERAL)	LACAUT	LABORATÓRIO DE ANÁLISES DE COMBUSTÍVEIS AUTOMOTIVOS	2000	CENTRO POLITÉCNICO - USINAS PILOTO DE TECNOLOGIA QUÍMICA - BLOCO A	CURITIBA	PR	(41) 3361-3188	lacaut@ufpr.br	http://www.lacaut.ufpr.br/	UFPR
ELECTRICITY	LACEP	LABORATÓRIO DE CONTROLE E ELETRÔNICA DE POTÊNCIA		AVENIDA TRABALHADOR SÃO-CARLENSE, 400	SÃO CARLOS	SP	(16) 3373 8734	jrm@sel.eesc.usp.br	http://igbt.eesc.usp.br/lacep	UNIVERSIDADE DE SÃO PAULO - ESCOLA DE ENGENHARIA DE SÃO CARLOS
ELECTRICITY	LACTEC	INSTITUTO DE TECNOLOGIA PARA O DESENVOLVIMENTO	2000	AV. COMENDADOR FRANCO, Nº 1341, JARDIM BOTÂNICO	CURITIBA	PR	(41) 3361-6242	ped@lactec.org.br	http://www.lactec.org.br	LACTEC
ELECTRICITY	LAI / TESLA	LABORATÓRIO DE APLICAÇÕES INDUSTRIAIS	1999	ESCOLA DE ENGENHARIA, CAMPUS PAMPULHA, BLOCO II, SALA 2832	BELO HORIZONTE	MG	(31) 3409 4874	secretaria.tesla@gmail.com	http://tesla.eng.ufmg.br/index.php	UNIVERSIDADE FEDERAL DE MINAS GERAIS - UFMG
OIL & GAS	LAMCSO	LABORATÓRIO DE MÉTODOS COMPUTACIONAIS E SISTEMAS OFFSHORE	1983	AVENIDA PEDRO CALMON, S/N – PRÉDIO ANEXO AO CENTRO DE TECNOLOGIA	RIO DE JANEIRO	RJ	(21) 3938-8496	contato@lamcso.coppe.ufrj.br	http://www.lamcso.coppe.ufrj.br/	UNIVERSIDADE FEDERAL DO RIO DE JANEIRO - COPPE

MAIN R&D INSTITUTIONS IN BRAZIL (Cont.)

ACTIVITY	SHORT NAME	FULL NAME	START	ADDRESS	CITY	ST	PHONE	E-MAIL	WEBSITE	HOME INSTITUTION
OIL & GAS	LAMEMO-GC	LABORATÓRIO DE MÉTODOS DE MODELAGEM E GEOFÍSICA COMPUTACIONAL	2005	AV. PEDRO CALMON, S/N° — PRÉDIO ANEXO AO CT	RIO DE JANEIRO	RJ	(21) 3938-7393	ivone@coc.ufrj.br	http://www.lamemo.coppe.ufrj.br	UNIVERSIDADE FEDERAL DO RIO DE JANEIRO - COPPE
OIL & GAS	LAMEP	LABORATÓRIO DE MODELAGEM EM ENGENHARIA DE PETRÓLEO		UNIDADE LYNALDO C. DE ALBUQUERQUE, RUA DOS ESCOTEIROS, S/N	JOÃO PESSOAL	PB	(83) 3209 8298	lamep@ci.ufpb.br	http://lamep.ci.ufpb.br/	UNIVERSIDADE FEDERAL DA PARAÍBA (UFPB)
ELECTRICITY	LAMOTRIZ	LABORATÓRIO DE EFICIÊNCIA ENERGÉTICA E MÁQUINAS MOTRIZ		AV. COSTA E SILVA CIDADE UNIVERSITÁRIA	CAMPO GRANDE	MS	(67) 3345-7450		https://faeng.ufms.br	UNIVERSIDADE FEDERAL DE MATO GROSSO DO SUL (UFMS)
ELECTRICITY	LAPE	LABORATÓRIO DE PESQUISAS EM ELETROQUÍMICA	1995	RODOVIA WASHINGTON LUÍS (SP 310), KM 235	SÃO CARLOS	SP	(16) 3351-8210	romeu@ufscar.br	http://www.ufscar.br	UNIVERSIDADE FEDERAL DE SÃO CARLOS (UFSCAR)
FUELS (GENERAL)	LAPEC	LABORATÓRIO DE PESQUISAS E ENSAIOS DE COMBUSTÍVEIS	2005	AV. RODRIGO OTÁVIO, Nº 6.200, CAMPUS UNIVERSITÁRIO SENADOR ARTHUR VIRGÍLIO FILHO	MANAUS	AM	(92) 99615-0102	lkcsouza@gmail.com	https://www.facebook.com/LapecUfam/	UNIVERSIDADE FEDERAL DO AMAZONAS (UFAM)
BIOFUELS	LAPROM	LABORATÓRIO DE TECNOLOGIA DE PARTÍCULAS E PROCESSOS MULTIFÁSICOS		FACULDADE DE ENGENHARIA QUÍMICA DEPARTAMENTO DE TERMOFLUIDODINÂMICA AV. ALBERT EINSTEIN, 500 BLOCO A, 1º ANDAR CIDADE UNIVERSITÁRIA	CAMPINAS	SP	(19) 3521-3927	katia@feq.unicamp.br	https://www.feq.unicamp.br	UNIVERSIDADE DE CAMPINAS - UNICAMP
ELECTRICITY	LASUP	LABORATÓRIO DE APLICAÇÕES DE SUPERCONDUTORES	1998	CENTRO DE TECNOLOGIA, BLOCO I-148 UFRJ, ILHA DO FUNDÃO	RIO DE JANEIRO	RJ	(21) 2562-8082	maglevcobra@dee.ufrj.br	http://www.dee.ufrj.br/lasup	UNIVERSIDADE FEDERAL DO RIO DE JANEIRO - COPPE
ELECTRICITY	LAT	LABORATÓRIO DE ALTA TENSÃO	1975	RUA APRÍGIO VELOSO, 882 - BAIRRO UNIVERSITÁRIO	CAMPINA GRANDE	PB	(83) 2101-1140	lat@dee.ufcg.edu.br	http://www.lat.dee.ufcg.edu.br	UNIVERSIDADE FEDERAL DE CAMPINA GRANDE (UFCG)

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ACTIVITY	SHORT NAME	FULL NAME	START	ADDRESS	CITY	ST	PHONE	E-MAIL	WEBSITE	HOME INSTITUTION
ELECTRICITY	LCA	LABORATÓRIO DE CONTROLE E AUTOMAÇÃO	1996	ESCOLA POLITÉCNICA - DEPTO. DE ENGENHARIA ELÉTRICA, CIDADE UNIVERSITÁRIA - ILHA DO FUNDÃO	RIO DE JANEIRO	RJ	(21) 2562-8021	basilio@dee.ufrj.br	http://www.dee.ufrj.br/lca/	UNIVERSIDADE FEDERAL DO RIO DE JANEIRO - COPPE
ELECTRICITY	LCE	LABORATÓRIO DE CONDICIONADORES DE ENERGIA		CAMPUS DO PICI - BLOCO 705, CAIXA POSTAL 6001	FORTALEZA	CE	(85)3366-9584	cicero@dee.ufc.br	http://www.dee.ufc.br	UFC
OIL & GAS	LEAD	LABORATÓRIO DE CONTROLE E AUTOMAÇÃO, ENGENHARIA DE APLICAÇÃO E DESENVOLVIMENTO	2005	CENTRO DE TECNOLOGIA/UFRJ, ANEXO AO I-2000 – CIDADE UNIVERSITÁRIA	RIO DE JANEIRO	RJ	(21) 3938-7211		http://www.coep.ufrj.br/gscar/lead/	UNIVERSIDADE FEDERAL DO RIO DE JANEIRO - COPPE
ELECTRICITY	LEAT	LABORATÓRIO DE EXTRA ALTA TENSÃO		AVENIDA ANTÔNIO CARLOS, 6627 - PAMPULHA	BELO HORIZONTE	MG	(31)3409-5474		https://www.eng.ufmg.br/portal/	UNIVERSIDADE FEDERAL DE MINAS GERAIS - UFMG
BIOFUELS	LEB	LABORATÓRIO DE ENERGIA DA BIOMASSA		AV. GOV. LINDEMBERG, Nº 316 - CENTRO	JERÔNIMO MONTEIRO	ES	(28) 3558-2542		http://www.florestaemadeira.ufes.br	UNIVERSIDADE FEDERAL DO ESPIRITO SANTO - UFES
BIOFUELS	LEBF	LABORATÓRIO DE ENERGIA DA BIOMASSA FLORESTAL		DEPARTAMENTO DE CIÊNCIAS FLORESTAIS - CÂMPUS UNIVERSITÁRIO, CAIXA POSTAL 3037	LAVRAS	MG	(35) 3829 1426	pgctm@posgrad.ufla.br	http://prpg.ufla.br	UNIVERSIDADE FEDERAL DE LAVRAS - UFLA
FUELS (GENERAL)	LEC	LABORATÓRIO DE ENSAIOS DE COMBUSTÍVEIS	2000	AV. ANTÔNIO CARLOS, 6627	BELO HORIZONTE	MG	(31) 3409-6651	combustiveis@qui.ufmg.br	http://www.lec.qui.ufmg.br	UNIVERSIDADE FEDERAL DE MINAS GERAIS - UFMG
BIOFUELS	LEDBIO	LABORATÓRIO DE ENSAIO E DESENVOLVIMENTO EM BIOMASSA E BIOCMBUSTÍVEIS		QUADRA 109 NORTE, AVENIDA NS-15, ALCNO-14	PALMAS	TO	(63) 3229-4500			UNIVERSIDADE FEDERAL DO TOCANTINS
ELECTRICITY	LEEA	LABORATÓRIO DE ELETROCATÁLISE E ELETROQUÍMICA AMBIENTAL		AV. BANDEIRANTES, 3900	RIBEIRÃO PRETO	SP	(16) 33153784		http://sites.usp.br/leea/	UNIVERSIDADE DE SÃO PAULO (USP)

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ACTIVITY	SHORT NAME	FULL NAME	START	ADDRESS	CITY	ST	PHONE	E-MAIL	WEBSITE	HOME INSTITUTION
ELECTRICITY	LEENER	LABORATÓRIO DE EFICIÊNCIA ENERGÉTICA	2001		JUIZ DE FORA	MG		casagrandejf@hotmail.com	http://www.ufjf.br/leener/	UNIVERSIDADE FEDERAL DE JUIZ DE FORA (UFJF)
THERMAL ENERGY	LEH	LABORATÓRIO DE ENERGIA HELIOTÉRMICA	2016	AV. BPS, 1303, BAIRRO PINHEIRINHO	ITAJUBÁ	MG				UNIVERSIDADE FEDERAL DE ITAJUBÁ
SOLAR ENERGY	LEIMO	LABORATORIO DE ELETROSCOPIA DE IMPEDÂNCIA E MATERIAIS ORGÂNICOS	2004	AV. ANTONIO CARLOS MAGALHÃES, 510 COUNTRY CLUB	JUAZEIRO	BA	(74)2102-7645	helinando@gmail.com	https://leimo-univasf.webnode.com	UNIVASF
SOLAR ENERGY	LEIMO	LABORATORIO DE ELETROSCOPIA DE IMPEDÂNCIA E MATERIAIS ORGÂNICOS	2004	AV. ANTONIO CARLOS MAGALHÃES, 510 COUNTRY CLUB	JUAZEIRO	BA	(74)2102-7645	helinando@gmail.com	https://leimo-univasf.webnode.com	UNIVASF
FUELS (GENERAL)	LELCO	LABORATÓRIO DE ENSAIOS EM ÓLEOS LUBRIFICANTES E COMBUSTÍVEIS		ESCOLA SENAI CONDE JOSÉ VICENTE DE AZEVEDO RUA MOREIRA DE GODOI, 226 IPIRANGA	SÃO PAULO	SP	(11) 2066-1991	lelco@sp.senai.br	https://automobilistica.sp.senai.br	
ELECTRICITY	LEMT	LABORATÓRIO DE ELETRÔNICA DE POTÊNCIA E MÉDIA TENSÃO	2006	CENTRO DE TECNOLOGIA BLOCO I, SALA I-156	RIO DE JANEIRO	RJ	(21) 3938-8637	contato@lemt.ufrj.br	http://www.lemt.ufrj.br/	UNIVERSIDADE FEDERAL DO RIO DE JANEIRO - COPPE
FUELS (GENERAL)	LEN	LABORATÓRIO DE ENERGIA E GÁS		RUA BARÃO DE JEREMOABO, SN, CAMPUS ONDINA	SALVADOR	BA	(71)3283-9808	ednildo@ufba.br	http://www.energia.ufba.br/	UFBA
OIL & GAS	LENEP	LABORATÓRIO DE ENGENHARIA E EXPLORAÇÃO DE PETRÓLEO	1993		CAMPOS DOS GOYTACAZES	RJ		secpg@lenep.uenf.br chefia@lenep.uenf.br	http://uenf.br/cct/lenep/	UNIVERSIDADE ESTADUAL DO NORTE FLUMINENSE (UENF)
ELECTRICITY	LENHS	LABORATÓRIO DE EFICIÊNCIA ENERGÉTICA	2010	AV. PAULO GAMA, 110 - BAIRRO FARROUPILHA	PORTO ALEGRE	RS	(51) 33086000			UNIVERSIDADE FEDERAL DO RIO GRANDE DO SUL (UFRGS)
ELECTRICITY	LEP	LABORATÓRIO DE ELETRÔNICA DE POTÊNCIA		AV. PROF. JOSÉ CARLOS ROSSI, 1370	ILHA SOLTEIRA	SP	(18) 3743-1086		http://www.lep.dee.feis.unesp.br	UNIVERSIDADE ESTADUAL PAULISTA - UNESP

MAIN R&D INSTITUTIONS IN BRAZIL (Cont.)

ACTIVITY	SHORT NAME	FULL NAME	START	ADDRESS	CITY	ST	PHONE	E-MAIL	WEBSITE	HOME INSTITUTION
ELECTRICITY	LEP	LABORATÓRIO DE ELETRÔNICA DE POTÊNCIA		AV. PROF. LUCIANO GUALBERTO, TRAVESSA 3, Nº 158	SÃO PAULO	SP	(11) 3091-5483	kaiser@lac.usp.br	http://www.pea.usp.br/Lep/	UNIVERSIDADE DE SÃO PAULO (USP)
BIOFUELS	LEPFE	LABORATÓRIO DE ENGENHARIA DE PROCESSOS FERMENTATIVOS E ENZIMÁTICOS		FACULDADE DE ENGENHARIA QUÍMICA AV. ALBERT EINSTEIN CIDADE UNIVERSITÁRIA"	CAMPINAS	SP				UNIVERSIDADE DE CAMPINAS - UNICAMP
THERMAL ENERGY	LEPTEN	LABORATÓRIOS DE ENGENHARIA DE PROCESSOS DE CONVERSÃO E TECNOLOGIA DE ENERGIA		UNIVERSIDADE FEDERAL DE SANTA CATARINA BLOCO A3 - 3º ANDAR TRINDADE -	FLORIANÓPOLIS	SC	(48) 3721-9379	rosangela@lepten.ufsc.br	http://www.lepten.ufsc.br/index.html	UNIVERSIDADE FEDERAL DE SANTA CATARINA - UFSC
SOLAR ENERGY	LES	LAB. DE ENERGIA SOLAR		CIDADE UNIVERSITÁRIA CAIXA POSTAL 5117	JOÃO PESSOA	PB	(83) 3216-7270		http://www.cear.ufpb.br/cear/infra	UNIVERSIDADE FEDERAL DA PARAÍBA (UFPB)
ELECTRICITY	LEV	LABORATÓRIO DE ENERGIA DOS VENTOS	1997	RUA PASSO DA PÁTRIA, 156 - BLOCO E - SALA 431	NITERÓI	RJ	(21) 2629-5700	http://lev@vm.uff.br	http://www.uff.br/lev	UNIVERSIDADE FEDERAL FLUMINENSE
RENEWABLE ENERGY	LINCA	LABORATÓRIO INTERDISCIPLINAR DE CONFLITOS AMBIENTAISE E GESTÃO AMBIENTAL	2000	CENTRO DE TECNOLOGIA, BLOCO C, SALA 211, CIDADE UNIVERSITÁRIA, ILHA DO FUNDÃO	RIO DE JANEIRO	RJ	(21) 2562-8767		http://www.linca.coppe.ufrj.br	UNIVERSIDADE FEDERAL DO RIO DE JANEIRO - COPPE
ELECTRICITY	LME	LAB. DE MICROENGENHARIA		CIDADE UNIVERSITÁRIA CAIXA POSTAL 5116	JOÃO PESSOA	PB	(83) 3216-7269		http://www.cear.ufpb.br/cear/infra	UNIVERSIDADE FEDERAL DA PARAÍBA (UFPB)
OIL & GAS	LNDC	LABORATÓRIO DE ENSAIOS NÃO DESTRUTIVOS, CORROSÃO E SOLDAGEM		PRÉDIO ANEXO AO CENTRO DE TECNOLOGIA 2 (CT-2)	RIO DE JANEIRO	RJ	(21) 3938-8535	omattos@metalmat.ufrj.br	http://www.metalmat.ufrj.br/Indc/	UNIVERSIDADE FEDERAL DO RIO DE JANEIRO - COPPE
FUELS (GENERAL)	LPCE	LABORATÓRIO DE PROPULSÃO, COMBUSTÃO E ENERGIA		PRAÇA MARECHAL EDUARDO GOMES, 50 - VILA DAS ACÁCIAS	SÃO JOSÉ DOS CAMPOS	SP	(12) 3947 5824		http://www.aer.ita.br	ITA

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ACTIVITY	SHORT NAME	FULL NAME	START	ADDRESS	CITY	ST	PHONE	E-MAIL	WEBSITE	HOME INSTITUTION
SOLAR ENERGY	LPF	LABORATÓRIO DE PESQUISAS FOTOVOLTAICAS		RUA SÉRGIO BUARQUE DE HOLANDA, 777 - CIDADE UNIVERSITÁRIA ZEFERINO VAZ BARÃO GERALDO	CAMPINAS	SP	(19) 3521-5297		https://portal.ifi.unicamp.br	UNIVERSIDADE ESTADUAL DE CAMPINAS - INSTITUTO DE FÍSICA "GLEB WATAGHIN"
ELECTRICITY	LSEE	LABORATÓRIO DE SISTEMAS DE ENERGIA ELÉTRICA		AVENIDA TRABALHADOR SÃO-CARLENSE, 400	SÃO CARLOS	SP	(16) 3373-8149		http://www.sel.eesc.usp.br/lsee/	UNIVERSIDADE DE SÃO PAULO - ESCOLA DE ENGENHARIA DE SÃO CARLOS
OIL & GAS	LTS	LABORATÓRIO DE TECNOLOGIA SUBMARINA	1989	AV. ATHOS DA SILVEIRA RAMOS, BLOCO I, SALA 108, CIDADE UNIVERSITÁRIA, ILHA DO FUNDÃO	RIO DE JANEIRO	RJ	(21) 3938-7789	lts@lts.coppe.ufrj.br	http://www.lts.coppe.ufrj.br	UNIVERSIDADE FEDERAL DO RIO DE JANEIRO - COPPE
BIOFUELS	ND	CENTRO DE ESTUDOS EM BIOREFINARIA	2014	AVENIDA BENTO GONÇALVES - DE 4594/4595 AO FIM	PORTO ALEGRE	RS	(51) 9131-0711	fernandosantos7@gmail.com	http://dgp.cnpq.br	UERGS
BIOFUELS	ND	GRUPO DE PESQUISA EM BIOENERGIA	2014	RUA GODOFREDO RABELO DE FIGUEREDO FILHO, (AVENIDA CENTENÁRIO), 697, BAIRRO SIM	FEIRA DE SANTANA	BA	(75)3616-2828		https://ufrb.edu.br	UFRB
BIOFUELS	ND	LABORATÓRIO DE BIOENERGÉTICA		AV. LOURIVAL MELO MOTA, SN, TABULEIRO DO MARTINS	MACEIÓ	AL	(82)3214-1381	coordenacao.iqb@gmail.com	http://www.ufal.edu.br	UFAL
ELECTRICITY	ND	GRUPO DE ESTUDOS ENERGIAS RENOVÁVEIS E EFICIÊNCIA ENERGÉTICA		AV. DR. MAURÍCIO CARDOSO, 510	NOVO HAMBURGO	RS	(51) 3586-8800		https://www.feevale.br	UNIVERSIDADE FEEVALE
ELECTRICITY	ND	GRUPO DE PESQUISA EM SISTEMAS DE ENERGIAS RENOVÁVEIS	2014	AVENIDA BENTO GONÇALVES - DE 4594/4595 AO FIM	PORTO ALEGRE	RS	(51) 3228-1731	elton-rossini@uergs.edu.br	http://dgp.cnpq.br	UERGS
ELECTRICITY	ND	LABORATÓRIO DE ELETRICIDADE, ELETROTÉCNICA E CONTROLE DE PROCESSOS		PRAÇA PRIMAVERA, 40 - BAIRRO PRAVERA	ITAPETININGA	SP	(77)3261-8609	campusita@uesb.edu.br	http://www2.uesb.br	

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ACTIVITY	SHORT NAME	FULL NAME	START	ADDRESS	CITY	ST	PHONE	E-MAIL	WEBSITE	HOME INSTITUTION
ELECTRICITY	ND	LABORATÓRIO DE ENSAIOS TÉRMICOS E AERODINÂMICOS		RUA SARMENTO LEITE 425/206, CENTRO HISTÓRICO	PORTO ALEGRE	RS	(51) 3308-3661			UFRGS
ELECTRICITY	ND	LABORATÓRIO DE PROCESSAMENTO ELETRÔNICO DE ENERGIA		RUA ARISTIDES NOVIS, N02	SALVADOR	BA	(71)3283-9740		http://www.eng.ufba.br	UFBA
ELECTRICITY	ND	LABORATÓRIO DE QUALIDADE DE ENERGIA		R. AUGUSTO CORRÊA, 01 - GUAMÁ	BELÉM	PA			http://www.gedae.ufpa.br	UNIVERSIDADE FEDERAL DO PARÁ (UFPA)
ELECTRICITY	ND	LABORATÓRIO PARA ANÁLISE DE QUALIDADE DE ENERGIA ELÉTRICA	2010	CAMPUS UNIVERSITÁRIO DO BACANGA – AVENIDA DOS PORTUGUESES S/N	SÃO LUIS	MA		lab_lqe@dee.ufma.br	http://www.lqe.iee.ufma.br	UNIVERSIDADE FEDERAL DO MARANHÃO (UFMA)
FUELS (GENERAL)	ND	LABORATÓRIO DE ANÁLISES DE COMBUSTÍVEIS	2004	AVENIDA COLOMBO, 5790 - BLOCO E 89	MARINGÁ	PR	(44) 3011-4791	sec-lac@uem.br	http://old.uem.br/lac/	UEM
SOLAR ENERGY	ND	LABORATÓRIO DE ENERGIA SOLAR		R. AUGUSTO CORRÊA, 01 - GUAMÁ	BELÉM	PA			http://www.gedae.ufpa.br	UNIVERSIDADE FEDERAL DO PARÁ (UFPA)
OIL & GAS	ND	INSTITUTO DE ENERGIA E AMBIENTE	2011	AVENIDA PROFESSOR LUCIANO GUALBERTO, 1289 - CIDADE UNIVERSITÁRIA	SÃO PAULO	SP	(11) 3091-2620	petrogas@iee.usp.br	http://www.iee.usp.br	UNIVERSIDADE DE SÃO PAULO (USP)
OIL & GAS	ND	INSTITUTO SENAI DE TECNOLOGIAS EM PETRÓLEO E GÁS		RUA JEREMIAS DA ROCHA, S/N, ABOLIÇÃO I	MOSSORÓ	RN	(84) 3316.3053	istpetroleogas@rn.senai.br	https://www.rn.senai.br	
BIOFUELS	ND	NÚCLEO INTERDISCIPLINAR DE PLANEJAMENTO ENERGÉTICO		RUA CORA CORALINA, 330 - CIDADE UNIVERSITÁRIA	CAMPINAS	SP	(19) 3521-1267	magali.marostica@nipe.unicamp.br	https://www.nipe.unicamp.br	UNIVERSIDADE DE CAMPINAS (UNICAMP)
WIND AND SOLAR GENERATION	NEA	LABORATÓRIO DO NÚCLEO DE ENERGIA ALTERNATIVA	2000	CAMPUS UNIVERSITÁRIO DO BACANGA – AVENIDA DOS PORTUGUESES S/N	SÃO LUIS	MA			http://www.nea.ufma.br/	UNIVERSIDADE FEDERAL DO MARANHÃO (UFMA)
FUELS (GENERAL)	NEMOG	NÚCLEO DE ESTUDOS EM ESCOAMENTO E MEDIÇÃO DE ÓLEO E GÁS	2017	AV. FERNANDO FERRARI, 514, GOIABEIRAS	VITÓRIA	ES				UNIVERSIDADE FEDERAL DO ESPIRITO SANTO (UFES)

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ACTIVITY	SHORT NAME	FULL NAME	START	ADDRESS	CITY	ST	PHONE	E-MAIL	WEBSITE	HOME INSTITUTION
ELECTRICITY	NHMET	NÚCLEO DE HIDROMETEOROLOGIA E ENERGIAS RENOVÁVEIS	2005	ROD. JUSCELINO KUBITSCHKE KM-02 - RAMAL UNIFAP	MACAPÁ	AP	(96) 3241-1431	labhidro@iepa.ap.gov.br	www.iepa.ap.gov.br/meteorologia	
OIL & GAS	NUCAT	NÚCLEO DE CATÁLISE	1991	CENTRO DE TECNOLOGIA, BLOCO I, SALA 132, CIDADE UNIVERSITÁRIA	RIO DE JANEIRO	RJ	(21) 3938-8796	vera@peq.coppe.ufrj.br	http://www.nucat.coppe.ufrj.br/	UNIVERSIDADE FEDERAL DO RIO DE JANEIRO - COPPE
NATURAL GAS	PAM	LABORATÓRIO DE PROCESSOS DE SEPARAÇÃO COM MEMBRANAS E POLÍMEROS	1968	RUA PAULO EMÍDIO BARBOSA, 485, QUADRA I-1, CENTRO DE EXCELÊNCIA EM GÁS NATURAL, PARQUE TECNOLÓGICO DA UFRJ – ILHA DO FUNDÃO	RIO DE JANEIRO	RJ	(21) 3733-4140	contatopam@peq.coppe.ufrj.br	https://sites.google.com/peq.coppe.ufrj.br	UNIVERSIDADE FEDERAL DO RIO DE JANEIRO - COPPE
ELECTRICITY	QMAP	CENTRO DE ESTUDOS EM QUALIDADE DA ENERGIA E PROTEÇÃO ELÉTRICA	1995	AV. BPS, 1303, BAIRRO PINHEIRINHO	ITAJUBÁ	MG	(35) 3629-1786	qmap.comunicacao@gmail.com	qmap.unifei.edu.br	UNIVERSIDADE FEDERAL DE ITAJUBÁ (UNIFEI)
FUELS (GENERAL)	SISEA	LABORATÓRIO DE SISTEMAS ENERGÉTICOS ALTERNATIVOS		AV. PROFESSOR MELLO MORAES, 2231 - CIDADE UNIVERSITÁRIA	SÃO PAULO	SP	(11) 3091-9678	sisea@usp.br	http://www.usp.br/sisea/	USP

MAIN GOVERNMENTAL INSTITUTIONS IN BRAZIL

ACTIVITY	SHORT NAME	FULL NAME	START	ADDRESS	CITY	ST	PHONE	E-MAIL	WEBSITE	HOME INSTITUTION
CEARÁ STATE AGENCY OF DEVELOPMENT	ADECE	AGÊNCIA DE DESENVOLVIMENTO DO ESTADO DO CEARÁ S.A.		Av. Dom Luís, 807 7º andar Etevaldo Nogueira Business - Meireles, Fortaleza-CE. CEP: 60160-230	Fortaleza	CE	(85) 3457-3300	adece@adece.ce.gov.br	http://www.adece.ce.gov.br	Secretaria de Desenvolvimento Econômico do Governo do Estado do Ceará
ACRE STATE REGULATORY AGENCY	AGEAC	Agência Reguladora dos Serviços Públicos do Estado do Acre	2003	Rua Valério Magalhães, 172 - Bosque - Rio Branco - AC - CEP.: 69.909-710	Rio Branco	AC	(68) 3214-2600	agencia.reguladora@ac.gov.br vanderlei.valente@ac.gov.br wvalente@uol.com.br	http://ageac.ac.gov.br	Governo do Estado do Acre
BAHIA STATE REGULATORY AGENCY	AGERBA	Agência Estadual de Regulação de Serviços Públicos de Energia, Transportes e Comunicações da Bahia	1998	AGERBA / SEINFRA, 4ª Avenida, 435 - CAB. CEP 41.745-002 - Salvador - Bahia	Salvador	BA	(71) 3115-4828 / 8615 / 4863 / 8625	eduardo.pessoa@agerba.ba.gov.br	http://www.agerba.ba.gov.br/	SEINFRA, Governo do Estado da Bahia
NATIONAL REGULATORY AGENCY	ANEEL	AGÊNCIA NACIONAL DE ENERGIA ELÉTRICA (BRAZILIAN ELECTRICITY REGULATORY AGENCY)	1996		BRASÍLIA	DF			www.aneel.gov.br	MINISTÉRIO DE MINAS E ENERGIA
NATIONAL REGULATORY AGENCY	ANP	AGÊNCIA NACIONAL DO PETRÓLEO, GÁS NATURAL E BIOCOMBUSTÍVEIS (NATIONAL AGENCY FOR PETROLEUM, NATURAL GAS AND BIOFUELS)	1998		BRASÍLIA (FORMAL HEADQUARTERS), RIO DE JANEIRO (CENTRAL OFFICE), SÃO PAULO (REGIONAL OFFICE) AND SALVADOR (REGIONAL OFFICE)	DF			www.anp.gov.br	MINISTÉRIO DE MINAS E ENERGIA
SÃO PAULO STATE REGULATORY AGENCY	ARSESP	Agência Reguladora de Saneamento e Energia do Estado de São Paulo		Avenida Paulista, 2313 - 4º Andar. CEP 01311-300	São Paulo	SP	0800-770-68-84	arsesp@arsesp.sp.gov.br	http://www.arsesp.sp.gov.br	Governo do Estado de São Paulo

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ACTIVITY	SHORT NAME	FULL NAME	START	ADDRESS	CITY	ST	PHONE	E-MAIL	WEBSITE	HOME INSTITUTION
FEDERAL GOVERNMENT	IBAMA	INSTITUTO BRASILEIRO DO MEIO AMBIENTE E DOS RECURSOS NATURAIS RENOVÁVEIS (BRAZILIAN INSTITUTE OF THE ENVIRONMENT AND RENEWABLE ENERGY RESOURCES)			BRASÍLIA	DF	0800 61 8080		www.ibama.gov.br	
FEDERAL GOVERNMENT	MAPA	MINISTÉRIO DA AGRICULTURA, PECUÁRIA E ABASTECIMENTO (MINISTRY OF AGRICULTURE, LIVESTOCK AND FOOD SUPPLY)		ESPLANADA DOS MINISTÉRIOS, BLOCO D	BRASÍLIA	DF	(61)3218-2828		www.agricultura.gov.br	
FEDERAL GOVERNMENT	MCTIC	MINISTÉRIO DA CIÊNCIA, TECNOLOGIA, INOVAÇÕES E COMUNICAÇÕES (MINISTRY OF SCIENCE, TECHNOLOGY, INNOVATIONS AND COMMUNICATIONS)				DF			www.mctic.gov.br	
FEDERAL GOVERNMENT	MDIC	MINISTÉRIO DA INDÚSTRIA, COMÉRCIO EXTERIOR E SERVIÇOS (MINISTRY OF INDUSTRY, FOREIGN TRADE AND SERVICES)			BRASÍLIA	DF			www.mdic.gov.br	
FEDERAL GOVERNMENT	MF	MINISTÉRIO DA FAZENDA (MINISTRY OF FINANCE)			BRASÍLIA	DF			www.fazenda.gov.br	

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ACTIVITY	SHORT NAME	FULL NAME	START	ADDRESS	CITY	ST	PHONE	E-MAIL	WEBSITE	HOME INSTITUTION
FEDERAL GOVERNMENT	MMA	MINISTÉRIO DO MEIO AMBIENTE (MINISTRY OF THE ENVIRONMENT)		ESPLANADA DOS MINISTÉRIOS, BLOCO B	BRASÍLIA	DF			www.mma.gov.br	
FEDERAL GOVERNMENT	MME	MINISTÉRIO DE MINAS E ENERGIA (MINISTRY OF MINES AND ENERGY)			BRASÍLIA	DF			www.mme.gov.br	
FEDERAL GOVERNMENT	MRE	MINISTÉRIO DAS RELAÇÕES EXTERIORES (MINISTRY OF EXTERNAL RELATIONS)		ESPLANADA DOS MINISTÉRIOS, BLOCO H	BRASÍLIA	DF			www.mre.gov.br	
PERNAMBUCO STATE GOVERNMENT	SDEC	SECRETARIA DE DESENVOLVIMENTO ECONÔMICO		Av. Rio Branco, N: 104, Bairro do Recife / Recife Antigo, Recife-PE CEP: 50030-310	Recife	PE	(81) 3182-1728 / 3184.2645	http://www.pe.gov.br/governo/contato/	http://www.sdec.pe.gov.br/	Governo de Pernambuco
SANTA CATARINA STATE GOVERNMENT	SDS	SECRETARIA DE ESTADO DO DESENVOLVIMENTO ECONÔMICO SUSTENTÁVEL		Rodovia José Carlos Daux, SC 401, km 5, nº 4600 Centro Administrativo, bl. 3, 1º andar - Saco Grande II Florianópolis/SC - CEP 88032-000	Florianópolis	SC	(48) 3665-2266	secretario@sds.sc.gov.br sds@sds.sc.gov.br	http://www.sds.sc.gov.br/	Governo do Estado de Santa Catarina
PARANÁ STATE GOVERNMENT	SEAE	SECRETARIA PARA ASSUNTOS ESTRATÉGICOS		Palácio das Araucárias - Rua Jacy Loureiro de Campos, s/n - 1º and - 80530-915 - Curitiba - PR	Curitiba	PR	41 3210-2883	http://www.seae.pr.gov.br/modulos/liaise/index.php?form_id=1		Governo do Estado do Paraná
GOIÁS STATE GOVERNMENT	SECIMA	SECRETARIA DE ESTADO DE MEIO AMBIENTE, RECURSOS HÍDRICOS, INFRAESTRUTURA, CIDADES E ASSUNTOS METROPOLITANOS		Palácio Pedro Ludovico Teixeira, Rua 82, nº 400, 1º Andar, Setor Sul - 74.015-908 - Goiânia - GO	Goiás	GO	(62) 3201-5271 / 3201-5235 / 3201-5151 / 5152	goiassolar@secima.go.gov.br ouvidoria@secima.go.gov.br	http://www.secima.go.gov.br/	Governo do Estado de Goiás

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ACTIVITY	SHORT NAME	FULL NAME	START	ADDRESS	CITY	ST	PHONE	E-MAIL	WEBSITE	HOME INSTITUTION
RIO GRANDE DO NORTE STATE GOVERNMENT	SEDEC	SECRETARIA DE DESENVOLVIMENTO ECONÔMICO		Centro Administrativo do Estado - Av. Senador Salgado Filho, s/n, Lagoa Nova - Natal/RN. CEP: 59064-901	Natal	RN	3232-1750 / 3232-1781	http://www.sedec.rn.gov.br/Conteudo.asp?TRAN=PORTIF&TARG=161&ACT=&PAGE=0&PARM=&LBL=Contatos	http://www.sedec.rn.gov.br	Governo do Rio Grande do Norte
MATO GROSSO STATE GOVERNMENT	SEDEC	Secretaria de Estado de Desenvolvimento Econômico		Palá Avenida Getúlio Vargas, 1.077 - Bairro Goiabeiras, 78032-000 - Cuiabá - Mato Grosso	Cuiabá	MT	(65) 3613-0036 / 3613-0052	lucasbarros@sedec.mt.gov.br	http://www.sedec.mt.gov.br/	Governo do Mato Grosso
MINAS GERAIS STATE GOVERNMENT	SEDECTES	Secretaria de Estado Desenvolvimento Econômico, Ciência, Tecnologia e Ensino Superior		Rod. Papa João Paulo II, nº 4001 Prédio GERAIS, 8º and. - Serra Verde - 31630-901 Belo Horizonte - MG	Belo Horizonte	MG	(31) 3915 5344 / 3915 5345	http://www.tecnologia.mg.gov.br/application/fale-conosco	www.tecnologia.mg.gov.br	Governo do Estado de Minas Gerais
RIO DE JANEIRO STATE GOVERNMENT	SEDEIS	SECRETARIA DE DESENVOLVIMENTO ECONÔMICO		Av. Rio Branco 110 - 20º, 21º e 22º andares. Centro - Rio de Janeiro - RJ. CEP 20040-001	Rio de Janeiro	RJ	(21) 2332-8413 / 2332-8414	faleconosco@desenvolvimento.rj.gov.br	http://www.rj.gov.br/web/sedeis	Governo do Estado do Rio de Janeiro
PARÁ STATE GOVERNMENT	SEDEME	Secretaria de Estado de Desenvolvimento Econômico, Mineração e Energia		Av. Senador Lemos, 290 - Umarizal. CEP.: 66050-000 - Belém - PA	Belém	PA	(91) 3110-2550	gabinete@sedeme.com.br	http://sedeme.com.br	Governo do Pará
ESPÍRITO SANTO STATE GOVERNMENT	SEDES	SECRETARIA DE ESTADO DE DESENVOLVIMENTO	2003	Praça João Clímaco, 142 - Cidade Alta, Centro CEP: 29015-110 - Vitória / ES	Vitória	ES	(27) 3636-1210 / 3636-9701 / 3636-9702 / 3636-9704	gabinete@sedes.es.gov.br	https://www.es.gov.br/secretarias/sedes	Governo do Estado do Espírito Santo
ALAGOAS STATE GOVERNMENT	SEDETUR	SECRETARIA DE ESTADO DE DESENVOLVIMENTO ECONÔMICO E TURISMO		Avenida da Paz, 1108 - Jaraguá. Maceió - Alagoas. CEP: 57022-050	Maceió	AL	(82) 3315-1713 / 3315-1707 / 3315-1728	suem@sedetur.al.gov.br	http://www.sedetur.al.gov.br	Governo do Estado de Alagoas
RONDONIA STATE GOVERNMENT	SEDI	Superintendência Estadual de Desenvolvimento Econômico e Infraestrutura		Av Farquar, 2986 - Bairro Pedrinhas Complexo Rio Madeira, Porto Velho, RO, CEP 76801470	Porto Velho	RO	(69)3216-5265 / 3216-5174	gabinetesedi@gmail.com basilioleandro@hotmail.com antonioaffonso@suder.ro.gov.br	http://www.rondonia.ro.gov.br/suder/	Governo de Rondônia
RORAIMA STATE GOVERNMENT	SEFAZ	Secretaria de Estado da Fazenda de Roraima		Praça do Centro Cívico, 466, Boa Vista - RR. CEP: 69.301-379	Boa Vista	RO	(95)2121-9027	sefaz@sefaz.rr.gov.br	http://www.portal.rr.gov.br/ https://www.sefaz.rr.gov.br	Governo do Estado de Roraima

MAIN GOVERNMENTAL INSTITUTIONS IN BRAZIL (Cont.)

ACTIVITY	SHORT NAME	FULL NAME	START	ADDRESS	CITY	ST	PHONE	E-MAIL	WEBSITE	HOME INSTITUTION
SERGIPE STATE GOVERNMENT	SEGOV	SECRETARIA DE ESTADO DE GOVERNO		Trav. Baltazar Gois, 86 - Ed. de Estado de Governo - 3º Andar - Centro	Aracajú	SE	(79) 3234-1402 / 3234-1400	laismony.santos@segov.se.gov.br	http://segov.se.gov.br	Governo do Estado de Sergipe
MARANHÃO STATE GOVERNMENT	SEINC	Secretaria de Estado de Indústria, Comércio e Energia		Ed. Nagib Haickel - Av. Professor Carlos Cunha, S/N - Calhau, São Luís - MA, 65076-820	São Luís	MA	(98) 3235-8621	expedito jr@seinc.ma.gov.br	http://www.seinc.ma.gov.br	Governo do Maranhão
MATO GROSSO DO SUL STATE GOVERNMENT	SEINFRA	SECRETARIA DE ESTADO DE INFRAESTRUTURA		Av. Des. José Nunes da Cunha, S/Nº. Parque dos Poderes - Bloco XIV 79.031-310 Campo Grande-MS	Campo Grande	MS	67 3318-5300	http://www.seinfra.ms.gov.br/fal-e-conosco-2/	http://www.seinfra.ms.gov.br/	Governo do Estado do Mato Grosso do Sul
BAHIA STATE GOVERNMENT	SEINFRA	SECRETARIA DE INFRAESTRUTURA	1998	Secretaria de Infraestrutura. 4ª Avenida, 440 - CAB. CEP 41.745-000 - Salvador - Bahia	Salvador	BA	(71) 3115-2106	http://www.infraestrutura.ba.gov.br/modules/liaise/?form_id=3	http://www.infraestrutura.ba.gov.br	Governo do Estado da Bahia
CEARÁ STATE GOVERNMENT	SEINFRA	SECRETARIA DE INFRAESTRUTURA		Av. Gen. Afonso Albuquerque Lima, s/n - Edifício Seinfra SRH - Cambéba. Fortaleza, CE. CEP: 60.822-325	Fortaleza	CE	(85) 3216.3762	adao.muniz@seinfra.ce.gov.br	http://www.seinfra.ce.gov.br/energia	Governo do Ceará
AMAZONAS STATE GOVERNMENT	SEINFRA	Secretaria de Estado de Infraestrutura	2003	Alameda Cosme Ferreira, 7600 B- Coroado III. Manaus – Amazonas. CEP: 69083-000	Manaus	AM	(92) 3647-1100	ass.imprensa.seinfra@gmail.com http://www.seinfra.am.gov.br/fal-e-conosco/	http://www.seinfra.am.gov.br	Governo do Estado do Amazonas
ACRE STATE GOVERNMENT	SEMA	SECRETARIA DE ESTADO DE MEIO AMBIENTE		Rua Benjamim Constant, nº 856 – Centro, 69900-160 , Rio Branco, Acre	Rio Branco	AC	(68) 3224-3990 / 3224-8786	sema@ac.gov.br	http://sema.ac.gov.br	Governo do Estado do Acre
TOCANTINS STATE GOVERNMENT	SEMARH	SECRETARIA DE MEIO AMBIENTE E RECURSOS HÍDRICOS		Av. Juscelino Kubitscheck, 38-76 - AANO, Palmas - TO, 77001-016	Palmas	TO			https://semarh.to.gov.br	Governo do Tocantins

MAIN GOVERNMENTAL INSTITUTIONS IN BRAZIL (Cont.)

ACTIVITY	SHORT NAME	FULL NAME	START	ADDRESS	CITY	ST	PHONE	E-MAIL	WEBSITE	HOME INSTITUTION
PIAÚ STATE GOVERNMENT	SEMINPER	SECRETARIA DE MINERAÇÃO, PETRÓLEO E ENERGIAS RENOVÁVEIS		Av. Antonino Freire, 1473, Centro, Ed. D. Antonieta Araújo, 1º andar, CEP: 64.001-040	Teresina	PI	(86) 3222-2078	seminper@gmail.com	http://www.seminper.pi.gov.br/	Governo do Piauí
PARAÍBA STATE GOVERNMENT	SERHMACT	SECRETARIA DE MEIO AMBIENTE, RECURSOS HÍDRICOS E DA CIÊNCIA E TECNOLOGIA		Av. Ministro José Américo de Almeida, S/N -Prédio do DER – CEP: 58013-280 – Torre – João Pessoa/PB	João Pessoa	PB	(83) 3218-4371 / 3218-4373	jazevedo@serhmact.pb.gov.br	http://paraiba.pb.gov.br/meio-ambiente-dos-recursos-hidricos-e-da-ciencia-e-tecnologia/	Governo da Paraíba
DISTRITO FEDERAL	SINESP	SECRETARIA DE ESTADO DE INFRAESTRUTURA E SERVIÇOS PÚBLICOS		Setor de Áreas Públicas, lote B, Bloco A15, EPIA dentro do complexo da NOVACAP – CEP: 71.215-000	Brasília	DF	(61) 3306-5022	ouvidoria@sinesp.df.gov.br	http://www.sinesp.df.gov.br	Governo do Distrito Federal
RIO GRANDE DO SUL STATE GOVERNMENT		SECRETARIA DE MINAS E ENERGIA		Av. Borges de Medeiros, 1501 Sétimo andar, ala norte Porto Alegre - RS 90020-020	Porto Alegre	RS	51 3288-7400	https://minasenergia.rs.gov.br/fale-conosco	https://minasenergia.rs.gov.br	Governo do Estado do Rio Grande do Sul
SÃO PAULO STATE GOVERNMENT		SECRETARIA DE ENERGIA E MINERAÇÃO		Praça Ramos de Azevedo, 254, 5º andar - República - São Paulo - SP. CEP: 01037-010	São Paulo	SP	(11) 3124-2110	energia@energia.sp.gov.br	www.energia.sp.gov.br	Governo do Estado de São Paulo
ENERGY PLANNING	EPE	ENERGY RESEARCH COMPANY		Av. Rio Branci, 1. Rio de Janeiro -- RJ	Rio de Janeiro	RJ	(21) 3512-3100	http://www.epe.gov.br/pt/a-epe/fale-conosco	http://www.epe.gov.br	Federal Government