

THE INVESTOR'S HANDBOOK FOR RENEWABLE ENERGY IN BRAZIL

AN INSIDER'S GUIDE



REA CONSULT

Preface

Favorable geographic conditions, growing electricity demand, progressive regulatory reform, and maturing supply chains, have made Brazil one of the most exciting countries in the world for renewable energy investment.

According to Bloomberg's **2019 Climatescope report**, Brazil ranks third most attractive in the world for clean energy investments. Brazil also ranks third globally in terms of installed capacity from renewable energy sources, after only China and the United States, according to **IRENA** analysis. Despite this, Brazil only ranks 7th in the world for installed wind power capacity and 22nd for solar.

The real renewable power in Brazil comes from hydroelectric, where it is only second to China. Large hydropower plants account for around 80% of domestic electricity generation, providing flexible and low-emission base power supply. However, further expansion is constrained by the remoteness and environmental sensitivity of remaining hydropower resources.

As a result, reforms in the Brazilian energy market over the last decade have focused on diversifying the country's energy mix. While natural gas plays a role in this new power landscape, the key focus has been to promote the development of wind and solar power generation by creating the technical, socio-economic, and political conditions required to encourage investment.

Transmission capacity and technology have improved to account for intermittent supply, new financing mechanisms have been put in place to suit a wide range of projects, and more supportive regulation has been established. From 2017 to 2020 (ytd) the average annual installed capacity growth of centralized solar power was approximately 35%. In the same period, distributed solar power grew by more than 120% on average, benefiting from the world's most progressive net metering regulation. The more mature wind sector saw an average increase in

the generation capacity of 8% per year, while total wind capacity is expected to double between 2017 and 2024.

There is a famous saying here, we say that "Brazil is not for beginners". Despite reform, Brazil is still an emerging market with many of the inefficiencies and cultural hurdles

you would expect of a populous Latin American country. However, those who can navigate Brazil's dense legal and regulatory jungle will discover a renewable energy market that is brimming with potential. Since I began working in the renewable energy sector, I have seen markets peak and stall. The conditions are right, now is the time for Brazil.

The Investor's Handbook for Renewable Energy in Brazil has been developed by REA Consult to support that journey. It serves as an insider's guide for those developing projects renewable energy in Brazil and anyone curious about the inner-workings of this lucrative market. A new chapter will be released every week, all free to read and share. See all the chapters published so far and **follow the evolving story here**



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REA Consult is a management and consulting firm committed to building bridges for international sustainable investments. Born in Brazil with offices in Europe, Asia, and South America, REA Consult has a global track record of supporting successful projects.

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ENVIRONMENTAL LICENSING IN BRAZIL

THE DENSE LEGAL JUNGLE THAT STANDS BETWEEN PROMISING RENEWABLE ENERGY PROJECTS & PROFITABLE POWER GENERATING ENTERPRISES

- △ Environmental Regulation
- △ Permitting Bodies

- △ Authorization Process
- △ Simplified Licensing Guide

Environmental Licensing for Renewable Energy Projects in Brazil

Overview

Brazil has always been a country with great energy generating capacity and environmental resources of huge national and international importance. Brazil is home to the world's largest river system, which presents great hydroelectric potential and great environmental responsibility. The ecological diversity of the Amazon rainforest, which covers 60% of Brazil's 8.5 million square kilometers territory, also adds some weight to the environmental licensing debate.

Energy has long been at the center of the environmental licensing discussion, including renewable projects. In the past hydroelectric plants played a dominant role, but today the biggest and brightest opportunities are coming from modern renewable energy generation. Consolidated ecosystems make wind and solar power enterprises powerful drivers for new businesses and economic growth, especially when related to foreign direct investments, but still face strict environmental policies in many parts of the country.

Environment, Regulation & Expansion

The Brazilian Electricity Sector (SEB – Setor Elétrico Brasileiro) is highly praised as an agent of economic growth, benefitting the lives of the population, and promoting environmental-friendly technologies.

That said, the evolution of the country's energy sector has walked hand in hand with sustainable projects and the irreversible trend for clean energy. Government monitoring, regulatory agencies, and society at large assure that the process for the installation of energy plants is conducted with the highest safety and environmental standards.

Since 1934, more than 130 legal documents concerning the environment and related topics have been published, approved, and practiced in Brazilian Law. However, it was in 1981 that the National Environmental Policy (Federal Law No. 6938/81) was established to drive the nation into an era of greater environmental awareness in which policies are protective as well as attentive to all processes that affect, involve, and exploit, natural, renewable, or nonrenewable resources.

In 2011, the Federal Supplementary Law No. 140 was enacted, which, in compliance with the Constitution of 1988, defines the roles and responsibilities of the federal, state, and municipal governments in relation to environmental licensing. Despite these various iterations, Brazil's environmental licensing is generally seen as overly legalistic and its application still raises a lot of controversies.

In the next decades, small hydroelectric plants (PCHs – pequenas centrais hidrelétricas), non-conventional energy sources and energy-saving programs have mainly been promoted through the Alternative Energy Sources Incentive Program (Proinfa – Programa de Incentivo às Fontes Alternativas de Energia Elétrica). It was created through Federal Decree 5,025/04, and its primary purpose was to ensure the growth of wind, biomass and small hydroelectric participation in the energy matrix, as well as develop each source's supply chain industry.

Bloomberg's New Energy Finance anticipates a total of US\$ 97 billion in solar energy investments alone by 2040, making environmental licensing a significant topic in economic, environmental, and especially investment discussions.

Environmental Requirements: Legislation & Government Bodies

Environmental Licensing (LA – Licenciamento Ambiental) is an administrative procedure where the proper environmental body authorizes implementation, capacity expansion, and operation of enterprises that could potentially damage the environment, as established in Article 10 of Law 6,938/81:

Article 10. *The construction, installation, expansion and operation of facilities and activities that make use of environmental resources, considered pollutant or having the potential to be considered as such, as well as the ones capable, under any circumstances, of causing environmental damage, require a previous authorization from the state's relevant body, which acts as a member of the National Environmental System (SISNAMA – Sistema Nacional do Meio Ambiente), and from the Brazilian Institute of the Environment and Renewable Natural Resources (IBAMA – Instituto Brasileiro do Meio Ambiente e Recursos Naturais Renováveis), when necessary, notwithstanding other applicable licenses.*

The environmental impact itself is described in the law's first article:

Article 1: *Environmental impact implies in any change in the environment's physical, chemical, and biological properties, caused by any material or energy resulting from human activity (Conama's Resolution 001/86).*

The next article presents the procedures for obtaining the appropriate license:

Article 2: *All environment changing activities and electricity power plants, regardless of primary energy source (when above 10 MW), must submit an environmental impact assessment, as well as the Environmental Impact Report (RIMA), for approval by the state's competent body, as well as by the Environment Special Secretary (SEMA – Secretaria Especial do Meio Ambiente), when necessary.*

As the above-mentioned articles show, LA is an important request when appraising economic and environmental premises of projects in Brazil, including the expansion of energy supply enterprises.

Bodies in charge of Environmental Licensing

The following structure, distributed among the many levels of national authority, exposes the array of bureaucracies that can be involved in an Environmental Licensing process, including the ones mentioned in other regulations, such as the Inter-ministerial Ordinance 60/15, ICMBio, among others:

- △ **Federal:** Brazilian Institute of the Environment and Renewable Natural Resources (IBAMA), when activities or environmental impacts extend to more than one state.
- △ **State:** Brazil's National Environmental Plan delegates to the states (environmental state bodies) the authority to grant licenses for enterprises located within their borders.
- △ **Municipal:** an environmental municipal body is in charge for enterprises that cause local environmental impact.



A Step-By-Step Environmental Licensing Authorization Guide

The process is divided in four steps, each having its own authorization:

1

Preliminary Phase

All mandatory procedures until the issue of the Reference Instrument (TR – Termo de Referência). This document allows for the formulation of the Environmental Impact Assessment (EIA – Estudo de Impacto Ambiental).

2

Prior License (LP – Licença Prévia)

This step evaluates the project's environmental viability. The EIA, which contains a minimum set of estimated information concerning the social and environmental impacts, is requested to conduct this appraisal.

3

Construction License (LI – Licença de Instalação)

After LP is granted, the submission of a Basic Environmental Plan (PBA – Plano Básico Ambiental) is mandatory, in accordance with the information contained in the engineering project, in which environmental tracking and monitoring programs are detailed. Construction works cannot start until this step is completed

4

Operation License (LO - Licença de Operação)

No plant can operate until the LO is granted. Its emission is concluded when the project proves the environmental programs specified in the PBA were fully implemented.

Simplified Environmental Licensing (LAS – Licenciamento Ambiental Simplificado)

Under certain circumstances, Environmental Licensing (LA) is made easier, as steps 2 – 4 require less detailed documentation. This is what characterizes a Simplified Environmental Licensing (LAS), applicable when environmental impacts are minimal (Conama's Resolution 279/01):

Article 1: *Simplified Environmental Licensing (LAS) procedures and deadlines apply to:*

- I – Hydroelectric plants and associated systems*
- II – Thermoelectric plants and associated systems*
- III – Electrical power transmission lines and substations*
- IV – Wind parks and other alternative sources of energy*

Article 2: For this Resolution, the following definition applies:

I - Simplified Environmental Report (RAS – Relatório Ambiental Simplificado): an assessment of the environmental aspects related to location, installation, operation, and expansion of an activity or enterprise, presented in order to obtain the necessary Prior License (LP), which will contain, among other things, information related to the environmental diagnosis of the region where the enterprise will be located, including its characteristics, environmental impacts, as well as the control, mitigation and compensation plans.

Article 3: *When requesting the Prior License (LP) to the appropriate body, the developer must submit the Simplified Environmental Report (RAS)*

Article 4: *The appropriate environmental body will determine, based on the RAS, if the enterprise is suitable to undergo a Simplified Environmental Licensing, and the decision is based on a technical perspective.*

A Practical Guide for Environmental Licensing

Considering its many facets, Environmental Licensing is regulated by a set of legal rules and norms that define the path to be followed as well as the bodies that participate in the process.

BEFORE SUBMITTING A PROJECT

- ▶ List all the relevant bodies
- ▶ Put together a special team to conduct the process itself
- ▶ Assure environmental information quality in order to avoid unnecessary delays






WHEN SUBMITTING A PROJECT

- ▶ Licensing should be at SISNAMA's state body. For more relevant environmental impact projects, IBAMA oversees the process.
 - ▶ An environmental license is not permanent. It needs to be renewed according to the validity period set by the regulating body.
 - ▶ The frequency of environmental inspections depends on the nature of the activity as well as the project's schedule (planning, implementation, and operation).
 - ▶ Compliance with environmental license conditions is monitored systematically. When the project is non-compliant, penalties are applied either through administrative or legal means, and the license, suspended or canceled.
- Nonetheless, Brazil's legal framework is solid enough to guarantee the license renewal for developers that stick to the rules. Denials only occur when there is enough evidence that:
1. The project is no longer fulfilling its primary purpose
 2. It is under illegal conditions
 3. Has incurred in unlawful practices

An environmental license needs to be renewed according to the validity period set by the regulating body.



A Step-By-Step Environmental Licensing Guide

<div style="border: 1px solid orange; padding: 5px; margin-bottom: 10px;">MATERIAL ENVIRONMENTAL IMPACT</div>  <ol style="list-style-type: none"> 1. Definition of the appropriate environmental body and the mandatory documents 2. Environmental license request 3. Documents appraisal by the responsible environmental body 4. Additional information requested by the responsible environmental body 5. Public hearing 6. Additional information requested by the responsible environmental body, considering what was informed during the public hearing 7. Final technical opinion is issued 8. License granting (or its refusal) is made public <div style="display: flex; align-items: center; margin-top: 20px;">  <p>ESTIMATED DEADLINE:</p> </div> <div style="text-align: center; margin-top: 20px;"> <p>6 MONTHS for license analysis</p> </div> <div style="margin-top: 20px;"> <p>+6 MONTHS (ADDITIONAL) if the process includes an Environmental Impact Assessment/ Environmental Impact Report (EIA/ RIMA) and/or public hearing.</p> </div>	<div style="border: 1px solid orange; padding: 5px; margin-bottom: 10px;">ALTERNATIVE ENERGY SOURCES</div>  <ol style="list-style-type: none"> 1. Definition of the appropriate environmental body and the mandatory documents 2. Environmental license request 3. Documents appraisal by the responsible environmental body 4. Additional information requested by the responsible environmental body 5. Informative technical meeting 6. Additional information requested by the responsible environmental body, if needed 7. Final technical opinion is issued 8. License granting (or its refusal) is made public <div style="display: flex; align-items: center; margin-top: 20px;">  <p>ESTIMATED DEADLINE:</p> </div> <div style="text-align: center; margin-top: 20px;"> <p>60 DAYS for license analysis</p> </div> <div style="margin-top: 20px;"> <div style="display: flex; align-items: center;">  <p>ESTIMATED COSTS:</p> </div> <p>License costs vary among environmental bodies. However, many states offer discounts as an incentive to promote investments in these sources of energy.</p> </div>
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Main Documents Required for Environmental Licensing

- ▶ Enterprise's industrial process description (memorandum)
- ▶ Requirement form filled and signed by the legal representative
- ▶ ID (RG) and Brazil's Social Security Number (CPF) copies of the legal representative
- ▶ Brazil's Social Security Number (CPF) and professional registration number copies of the professionals in charge of designing, building and operating the enterprise
- ▶ ID (RG) and Brazil's Social Security Number (CPF) copies of the person representing the company when dealing with environmental bodies
- ▶ ID (RG) and Brazil's Social Security Number (CPF) copies of the attorney, together with a copy of the power of attorney, when applicable
- ▶ Copy of the last executive board election minutes (for joint stock companies) or copy of articles of incorporation (for limited liability companies)
- ▶ Enterprise Registry of Legal Entity (CNPJ – Cadastro Nacional de Pessoa Jurídica) copy
- ▶ Copies of property ownership (or any other document granting rights of use)
- ▶ Copy of certificate issued by the city hall indicating that the enterprise is compliant with the city's zoning law
- ▶ Copy of previous environmental license, if applicable
- ▶ Certificate of Tax Payment (GR – Guia de Recolhimento), the document used for environmental license payment, as defined by the appropriate body
- ▶ Enterprise's land location plan and hydraulic pipes plan for industrial waste, sewage, cooling water, and rainwater.



Other documents may be requested as needed, depending on the environmental body in charge of granting the license. For this reason, it is highly recommended to monitor the process closely, preferably through a multidisciplinary and experienced team, who will be responsible for the many formalities involved in the process.



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Please note that the energy field is dynamic, and the material and data presented herein could change.

Sources

ABDI	BlueSol	CNJ	Iberdrola
ABEEólica	Brazil Government	CTGAS-ER	Instituto Acende
ABSOLAR	Canal Energia	EPE	MME
ANEEL	CBFT	EXAME	ONS
BDNES	CCEE	IBD Group	Valor Sectorial Energia

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