



Risk Taxonomy

1. Energy Market Risk

1. i) Energy price risk

EDPR faces limited energy price risk as it pursues a strategy of being present in geographies with long-term visibility on revenues. In several countries where EDPR is present, prices are determined through regulated framework mechanisms. In those countries with no regulated tariffs, Power Purchase Agreements (PPAs) are negotiated with different offtakers to eliminate price risk from Electricity and Environmental attributes (Green Certificates, Guarantees of Origin or RECs- Renewable Energy Certificates).

Despite EDPR's strategy of minimizing market price risk, EDPR still has some plants with merchant exposure.

In Europe, EDPR operates in countries where the selling price is defined by a feed-in-tariff (Portugal) or a contract for differences remuneration scheme (Italy, Poland, France, Hungary or Greece). EDPR also operates in markets where, on top of the electricity price, it receives either a pre-defined regulated premium (Spain) or a green certificate, whose price is achieved on a regulated market (Belgium, Poland or Romania).

In countries with a predefined regulated premium or a green certificate scheme, EDPR is exposed to energy price fluctuations.

Considering current PPAs in place, EDPR is exposed to energy price risk in Romania and Poland, and partially in Italy, Netherlands and Spain (among others). Additionally, in European countries with a green certificate scheme (Romania, Belgium and Poland), EDPR is exposed to fluctuation on the price of green certificates.

The US market does not provide a regulated framework system for the electricity price. Nevertheless, renewable generation is incentivized through PTCs (Production Tax Credits) and regional Renewable Portfolio Standard (RPS) programs that allow receiving RECs for each MWh of renewable generation. REC prices are fairly volatile and depend on the regional supply/demand equilibrium in the relevant market.

Most of EDPR's capacity in the US PPAs have predefined prices determined by bundled (electricity + REC) long-term contracts with local utilities or C&Is, in line with the Company's policy of minimizing energy price risk. Despite existing long-term contracts, some EDPR's plants in the US do not have PPAs and are selling merchant with exposure to electricity and REC prices. Additionally, some plants with existing PPAs do not sell their energy where it is produced and are therefore exposed to basis risk (difference in price between the location where energy is produced and that where that energy is sold).

In Canada, the selling prices are defined by long-term feed-in-tariffs, thus, there is no energy price exposure.



In Brazilian and Chilean operations, the selling price is defined mainly through a public auction which is later translated into a long-term contract. Energy price exposure is limited, with reduced exposure for the production above or below the contracted production.

In APAC, EDPR operates in markets where the selling price is defined by a feed-in-tariff (Vietnam and Taiwan) or through Power Purchase Agreements (Singapore, China and Japan).

Under EDPR's global approach to minimize the exposure to market energy prices, the Company evaluates on a permanent basis, if there are any deviations to the pre-defined limits (measured through EBITDA at risk, Net Income at risk and total merchant exposure). EDPR aims to minimize Environmental Attributes price risk with the signing of bundled PPAs with private off takers, which include the sale of the electricity and the Green Certificates, Guarantees of Origin or RECs. In some cases, the offtaker may be interested in contracting only the Green Certificate or the REC, thus a GCPA (Green Certificate Purchase Agreement) or a RECPA (REC Purchase Agreement) is signed.

In those geographies with remaining merchant exposure, EDPR uses various commodity-hedging instruments in order to minimize the exposure to fluctuating market prices. In some cases, due to the lack of liquidity of financial derivatives, it may not be possible to successfully hedge all existing merchant exposure, after considering PPAs in place.

As aforementioned, some US plants have exposure to REC price risk and/or basis risk (difference in electricity price between locations). EDPR hedges REC prices through forward sales and basis exposure through financial swaps or FTR (Financial Transmission Rights).

1. ii) Energy Production Risk

The amount of electricity generated by EDPR's renewable plants is dependent on weather conditions, which vary across locations, from season to season and from year to year.

Variation on the amount of electricity that is generated affects EDPR's operating results and efficiency.

Not only the total wind or solar production in a specific location is relevant, but also the profile of production. Wind usually blows more at night than at daytime, and the opposite for solar, with each technology capturing a different price. Generation profile will affect the discount or add-on in price of a plant versus a baseload generation.

Finally, curtailment of a plant will also affect its net production. Curtailment occurs when the production of a plant is stopped by the TSO (Transmission System Operators) for external reasons to the Company. Examples of cases of curtailment are upgrades in transmission lines or exceptional congestion (high level of electricity generation for available transmission capacity).

EDPR mitigates wind and solar resource volatility and seasonality through geographical diversification of its asset base in different countries and regions.



EDPR acknowledges the correlation between different plants in its portfolio that allows for this geographical diversification, which enables EDPR to partially offset production variations in each region and to keep the total energy generation relatively steady. Currently, EDPR is present in more than 25 international markets across Europe, North America, South America and APAC.

Additionally, Global Energy Management regularly perform analyses on the possibility of contracting Wind Hedges to potentially mitigate the volume risk.

Profile risk and curtailment risk are managed ex-ante. For every new investment, EDPR factors the effect that expected generation profile and curtailment will have on the output of the plant. Generation profile and curtailment of EDPR's plants are constantly monitored by EDPR's Risk department to detect potential future changes.

1. iii) Liquidity risk

Liquidity risk is the risk of EDPR not meeting its financial obligations. Liquidity risk is mainly related to extreme market movements in energy prices, interest rates, exchange rates or credit markets, which may change the expected cash flow from revenues, OPEX, margin calls or funding (due to credit downgrades).

EDPR tracks liquidity risk in the short term (margin calls, etc.) and in the long term (financing sources) in order to meet strategic targets previously set (EBITDA, debt ratio and others).

EDPR's strategy to manage liquidity risk is to ensure that its liquidity is sufficient to meet financial liabilities when due, under both normal and stressed conditions, and without incurring unacceptable losses or risking damage to EDPR's reputation.

Different funding sources are used such as Tax Equity investors, commercial banks, multilateral organizations, corporate debt and asset rotation in order to ensure long-term liquidity to finance planned projects and working capital.

2. Financial Risk

2. i) Interest Rate Risk

Given the policies adopted by EDPR, current exposure to variable interest rate is not significant and financial cash flows are substantially independent from the fluctuation of interest rates.

The purpose of interest rate risk management policies is to reduce the exposure of long-term debt cash flows to market fluctuations, mainly by contracting long term debt with a fixed rate.

When long-term debt is issued with floating rates, EDPR settles derivative financial instruments to swap from floating to fixed rate.



EDPR has a portfolio of interest-rate derivatives with maturities of up to 15 years. Sensitivity analyses of the fair value of financial instruments to interest-rate fluctuations are periodically performed.

With most of interest rates being fixed, main exposure to interest rates arises at refinancing. To protect against this risk, EDPR intends to maintain a balanced maturity profile for its corporate fixed debt, thus, diversifying the risk of bad timing when refinancing occurs. Repricing calendar of debt is continuously monitored together with interest rates in order to detect good timing for restructuring debt.

Additionally, Risk and Finance teams regularly perform analyses on the possibility of carrying out pre-hedging of interest rates, in order to identify potential opportunities to further mitigate this risk.

Taking into account risk management policies and approved exposure limits, RISK supports the Finance team in interest rate hedging decisions and the Finance team submits the appropriate financial strategy to each project/location for Management Team's approval.

2. ii) Exchange Rate Risk

As a global company present in several markets with different currencies, EDPR is exposed to the exchange-rate risk resulting from investments in foreign subsidiaries. Under construction and operating plants can have currency exposure to the US dollar, Romanian leu, Polish zloty, Brazilian real, British pound, Canadian dollar and Hungarian forint. In APAC, main FX exposure comes from Singaporean dollar, Chinese renminbi, and Taiwanese dollar, with relatively small exposure to other southeast Asian currencies. In addition, EDPR has also a marginal fiscal exposure to MXN due to its Mexican assets.

EDPR hedges risk against currency fluctuations by procuring financing in the same currency as the revenues of the project. When local financing is not available, EDPR hedges debt cash flows through cross currency interest rate swaps.

EDPR also hedges its net investment (investment after deducting local debt obligations) in foreign currency through cross currency interest rate swaps and forward instruments.

Finally, EDPR contracts foreign exchange forwards to hedge the risk for specific transactions, mainly in payments to suppliers which may be denominated in different currencies than the projects' revenues, and also to hedge proceeds from Asset Rotation deals.

EDPR's hedging efforts minimize exchange rate volatility, but do not completely eliminate this risk due to the high costs associated to hedging FX in certain situations.

2. iii) Inflation Price Risk

In certain geographies, regulated remuneration is linked to inflation. Additionally, O&M costs are considered to be linked to inflation in most cases.



Exposure to inflation in revenues may be naturally hedged with exposure to interest rates. EDPR regularly analyses inflation exposure and its relationship with interest rates to adjust the level of interest rate coverage in project finance structures.

Exposure to inflation in O&M costs for each project is managed at the moment of the investment decision, by carrying out sensitivity analyses on the evolution of O&M costs.

2. iv) Commodity Price Risk (other than energy)

In projects in which there is a significant time lag between investment decision and the start of construction, EDPR may be exposed to the price of the materials used in turbine, solar panel and battery manufacturing, foundations, and interconnection, through escalation formulae included in the contracts signed with suppliers.

In order to manage this risk, EDPR may hedge the market exposure in OTC/future commodity markets, considering the risks (potential impact on project profitability) and the cost of the hedge.

2. v) Capital Gains Risk

Risk of depreciation in the value of assets being considered for sale, due to changes in market conditions such as exchange rates, interest rates, energy prices or inflation, among others.

To manage this risk, EDPR tries to mitigate the impacts of the abovementioned effects by hedging its exposure, whenever possible, while also performing sensitivity analysis on the estimated amount of capital gains from Asset Rotation transactions, resulting from changes in market variables.

Additionally, EDPR maintains a diversified portfolio of projects in terms of geographical location, technology and risk profile and is constantly reassessing its Asset Rotation strategy, with the aim of extracting the highest value out of its projects.

3. Strategic risk

3. i) Country Risk

Country Risk is defined as the probability of occurrence of a financial loss in a given country due to macroeconomics, political or natural disasters. EDPR has defined a Country Risk Policy that assesses country risk through an internal scoring based on publicly available data. This internal scoring is compared with external assessments from renowned entities. Each risk factor affecting country risk is evaluated independently to decide on potential mitigating actions:

- **Macroeconomic Risk:** risks from the country's economic evolution, affecting revenue or cost time of the investments.
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- **Political Risk:** all possible damaging actions or factors for the business of foreign companies that emanate from any political authority, governmental body or social group in the host country.
- **Natural disaster Risk:** natural phenomena (seismicity, weather) that may impact negatively in the business conditions.

Before approving a project in a new geography, EDPR analyses the risk of the new country and compares it to its existing portfolio. Mitigation measures may be decided when this risk is above a certain threshold.

In addition, EDPR uses a Security risk index to rank countries from a security and safety standpoint, establishing mitigation measures for employees when above a pre-defined threshold.

3. ii) Regulatory Risk (renewables)

The development and profitability of renewable energy projects is subject to policies and regulatory frameworks. The jurisdictions in which EDPR operates provide different types of incentives supporting energy generated from renewable sources.

Remuneration schemes have become less competitive in some countries due to inflationary pressures affecting supply chains and construction costs, and it cannot be guaranteed that current support will be maintained in all EDPR's geographies or that future renewable energy projects will benefit from current support measures. Regulation promoting green energy has been revised or is under revision in some of the countries where EDPR is present.

EDPR is managing its exposure to regulatory risks through diversification, by being present in several countries and through participation as an active member in several wind and solar associations.

Regulatory Risk in each of EDPR's countries is monitored continuously, considering current regulation, potential drafts of new laws, feedback from associations, evolution of installed renewable generation capacity and other inputs. EDPR has developed an internal quantitative assessment of Regulatory Risk that serves as an indicator for changes in supporting schemes. This measure is updated regularly in all EDPR's geographies.

Regulatory Risk is also considered ex-ante, at the moment of the investment, through sensitivity analyses that are performed to evaluate its impact in project profitability under different scenarios.

3. iii) Competitive Landscape Risk

In the renewables business, size can be an advantage or disadvantage in specific situations. For example, in development of renewable projects, small and dynamic companies are usually more competitive than larger companies.

On the other hand, when participating in tender processes for offshore wind farms, the size of the investment benefits larger companies.

Additionally, the consequences of a change in the competitive landscape due to mergers and acquisitions may also be a risk.

To mitigate the risks stemming from the competitive landscape, EDPR has a clear knowledge of its competitive advantages and tries to leverage on them. When EDPR has no advantage versus its competitors, alternatives are considered in order to become competitive. For example, for offshore wind farms, EDPR has partnered with large companies with previous experience in large electricity generation projects, in order to form a more competitive consortium.

3. iv) Technology Disruptions Risk

Most renewables are relatively recent technologies, which are continuously evolving and improving efficiency. As such, some initially expensive technologies can become competitive in a relatively short time.

EDPR growth focuses in the most competitive renewable technologies at the moment, which are onshore wind, offshore wind, solar PV and Distributed Generation, but also participates in other innovative projects such as floating offshore wind, batteries development or green hydrogen.

3. v) Investment Decisions Criteria and Energy Planning

Not all projects have the same risk profile. This will depend on the duration of the fixed remuneration, the amount of merchant exposure, construction risk, etc.

In order to take proper business decisions, EDPR uses Risk Adjusted Metrics for investment decisions, which take into consideration the different risks inherent to each project.

Assumptions in future evolution of energy markets affect the profitability of the investments for the period after the fixed remuneration is over (regulated tariff or PPAs). Structure of electricity markets in most of EDPR geographies (marginal setting price) were not designed to consider a great share of generation from renewable sources with zero marginal price. Thus, the increase in renewable generation could lead to lower pool prices in medium term if reforms of electricity markets are not properly undertaken.

When investing, EDPR performs sensitivity analyses to stress pool price scenarios for the period without fixed remuneration to understand the robustness of the profitability of the investment.

3. vi) Supply Chain Risk

Price of equipment is affected, not only by market fluctuations of the materials used, but also by the demand of this equipment or a possible increase in trade tariffs and levies.



For every new project, EDPR secures the demand risk by engaging in advance with manufacturers, elected through a competitive process.

The demand for new plants may offset the offer of equipment. Currently, the local component requirement in some geographies (ex: Brazil) may create this shortfall situation. In the event of a trade war, supply chain of equipment suppliers may be affected, creating further imbalances in local component requirements.

EDPR currently faces limited risk to the availability and price increase of equipment after project investment approval, due to existing framework agreements with major global suppliers. The Company uses a large mix of suppliers in order to diversify its equipment supply risk. For geographies with specific requirements of local content, EDPR typically does not engage in a project before securing the supply of that equipment.

3. vii) Reputational Risk

Companies are exposed to public opinion and today's social networks are a rapid means to express and propagate particular opinions. A bad reputation could eventually harm financial results of a company in the short and in the long term.

To address and mitigate reputational risk, EDPR is committed not only in building a better future, but also in doing it the right way, in an ethical and sustainable manner, complying with legal requirements, following best practices, and creating awareness and providing trainings to its employees.

4. Counterparty Risk

4. i) Counterparty Credit Risk

If the transactions or portfolio of transactions with the counterparty has a positive economic value at the time of default, an economic loss would occur.

To control credit risk at EDPR, thresholds of Expected Loss and Unexpected Loss are established at company level as defined under Basel Standards and re-evaluated monthly. If the threshold is surpassed by the company as a whole, mitigation measures are implemented in order to remain within the pre-established limit.

Additionally, Expected Loss limits are established for each individual counterparty or Group of counterparties (parent and subsidiaries).

4.ii) Counterparty Operational Risk

Even without a direct loss at the time of default, replacing the counterparty could incur costs for EDPR due to potential delays and higher contract values with a new counterparty (replacement costs).

Suppliers, Construction and O&M subcontractors are counterparties to which EDPR is exposed from an operational point of view.

To minimize the probability of incurring in potential replacement costs with third parties, EDPR's policy concerning counterparty operational risk is managed by an analysis of the technical capacity, competitiveness, credit quality and replacement cost of the counterparty.

5. Operational Risk

5. i) Development Risk

Renewable plants are subject to strict regulations at different authority levels (international, national, state, regional and local) relating to the development, construction, grid interconnection and operation of power plants. Among other things, these laws regulate landscape and environmental aspects, building licenses, land use and land securing and access to the grid issues.

While permitting processes might be different depending on the geographies, EDPR acknowledges a trend for legislations to align towards concentrating the most restrictive rules and development risks on the consenting (environmental and urban permissions) and interconnection (electricity connection of the plant to the national grid).

In this context, EDPR's experience gathered in different markets is useful to anticipate and deal with similar situations in other countries.

During the development and design phase, EDPR focuses on the optimization of its projects. By mastering the variables, such as choice of locations, layout, etc., the objective is to make the projects more resilient to permitting risks.

Additionally, EDPR mitigates development risk by generating optionality, with development activities in more than 20 different markets and a portfolio of projects in several stages of maturity. EDPR has a large pipeline of projects that provide a "buffer" to overcome potential delays in the development of prioritized projects, ensuring growth targets and being able to compensate permitting delays in some geographies.

5. ii) Construction Risk

During the construction of the foundations, interconnection and substation of a plant, and the installation of the equipment, different events (bad weather, accidents, etc.) might occur that could imply an over cost or a delay in the commercial operation date of the plant:

- The delay implies a postponement of cash flows, affecting profitability of the investment.
- When a plant has a PPA, a delay of the commercial operation date might imply the payment of Liquidated Damages (LDs), with the consequent loss of revenues and the impact on annual financial results.

During the design phase, EDPR's technical and engineering teams supervise the engineering and the installation method. Construction is subcontracted to technically capable construction companies.



In both cases, a critical path analysis is performed to assess the reliability of the construction and installation plan. Also, collaterals may be required to the counterparties providing the construction services, following EDPR's Counterparty Risk Policy.

5.iii) Operation Risk

a) Damage to Physical Assets Risk

Renewable plants under construction and in operation are exposed to weather hazards, natural disasters, etc. These risks depend on the location of the assets. All plants are insured against physical damage during construction and operation stages. Also, for operating projects, any natural disaster, weather hazard or accident will be partially insured against revenue losses caused the event.

b) Equipment Performance Risk (O&M costs)

Output from renewable plants depends upon the operating availability of the equipment.

EDPR mitigates this risk by using a mix of suppliers, minimizing technological risk and avoiding exposure to a single manufacturer.

EDPR also engages suppliers through medium-term full-scope maintenance agreements during the first years of operation to ensure alignment with supplier in minimizing technology risk.

Finally, for older plants, EDPR has created an Operation and Maintenance (O&M) model with an adequate preventive and scheduled maintenance program. EDPR externalizes non-core technical O&M activities of its renewable plants, while primary and value-added activities continue to be controlled by EDPR.

5. iv) IT/OT Risk

IT (Information Technologies) and OT (Operational Technologies) risk may occur in the technical network (information network for plants operation) or in the office network (information network of corporate services: ERP, accounting...)

EDPR mitigates this risk creating redundancy of servers and control centres of renewable plants. Redundancy is created in a different location to anticipate potential natural disasters, etc.

5. v) Legal claims Risk (compliance, corruption, fraud)

Like any other organization, EDPR faces potential claims from third parties and could be subjected to charges of corruption and fraud of its employees.

EDPR has implemented an internal "Code of Ethics" and an Anticorruption Policy where the company commits to comply with legal obligations in every community where EDPR is established.



Additionally, the company Ombudsperson receives all the complaints sent through the “Code of Ethics” channel and decides the appropriate procedure for each one of them. An anticorruption mailbox is also available to report any questionable practice.

5.vi) Personnel Risk

EDPR identifies four main risk factors regarding personnel: turnover, health and safety, human rights, and discrimination, violence or behaviour against human dignity.

- Turnover: A high turnover implies direct costs of replacement and indirect costs of knowledge loss. EDPR mitigates turnover through constant reassessment and benchmarking of remuneration schemes in different geographies. Additionally, EDPR offers flexibility to its employees to improve work life balance.
- Health and safety: EDPR has deployed an H&S management system, complying with OHSAS 18001, pursuing the “zero accidents” target.
- Human rights: EDPR has committed, through its “Code of Ethics”, to respect international human rights treaties and best work practices. All counterparties which sign a contract with EDPR are committed to respect EDPR’s “Code of Ethics”.
- Discrimination, violence or behaviour against human dignity: EDPR forbids any kind of discrimination, violence or behaviour against human dignity, as stated in its “Code of Ethics”.

5. vii) Processes Risk

Internal processes are subject to potential human errors that may negatively affect the outcome. Internal Audit Department regularly reviews internal processes and recommends the establishment of new controls or the improvement in the implementation of existing procedures.

Moreover, business continuity is ensured by a Global Crisis Plan, which defines the procedure to follow for each level of crisis and frames individual emergency plans at activity or asset level. Also, a tool to oversee different events that could impact Business Continuity is being used to ensure and support the correct management of crisis.

6. ESG Risk

6. i) Environmental Risk

Environmental risks include the actual or potential threats and economic impacts of adverse effects on the environment by activities carried out by organizations and countries. Some issues analysed under this topic include climate change, circular economy or biodiversity.

EDPR performs some analyses to identify climate-related risks and opportunities, such as those based on the Task-Force on Climate-Related Financial Disclosures (TCFD) recommendations.



The impact of these risks and opportunities are assessed on an annual basis and mitigated through environmental measures, contingency plans and other related initiatives.

6. ii) Social Risk

Social Risk encompasses activities that affect how relations are managed with employees, suppliers, customers and communities where EDPR operates.

EDPR focuses mainly on factors such as human rights, health and safety within the company and also with its third-party contractors, and labour issues in the markets where the company is present.

6. iii) Corporate Organization and Governance

Corporate governance systems should ensure that a company is managed in the interests of its shareholders and other relevant stakeholders.

In particular, EDPR has an organization in place with a special focus on transparency, where the management body (Board of Directors) is separated from the supervision and control duties (Audit, Control and Related Party Transactions Committee).