هيئة تنظيم الخدمات العامة
Authority for Public Services Regulation

Key findings: EMER COM Report on Investment Regulation Evaluation, Approval and Risk Mitigation Approaches for energy Investment Projects

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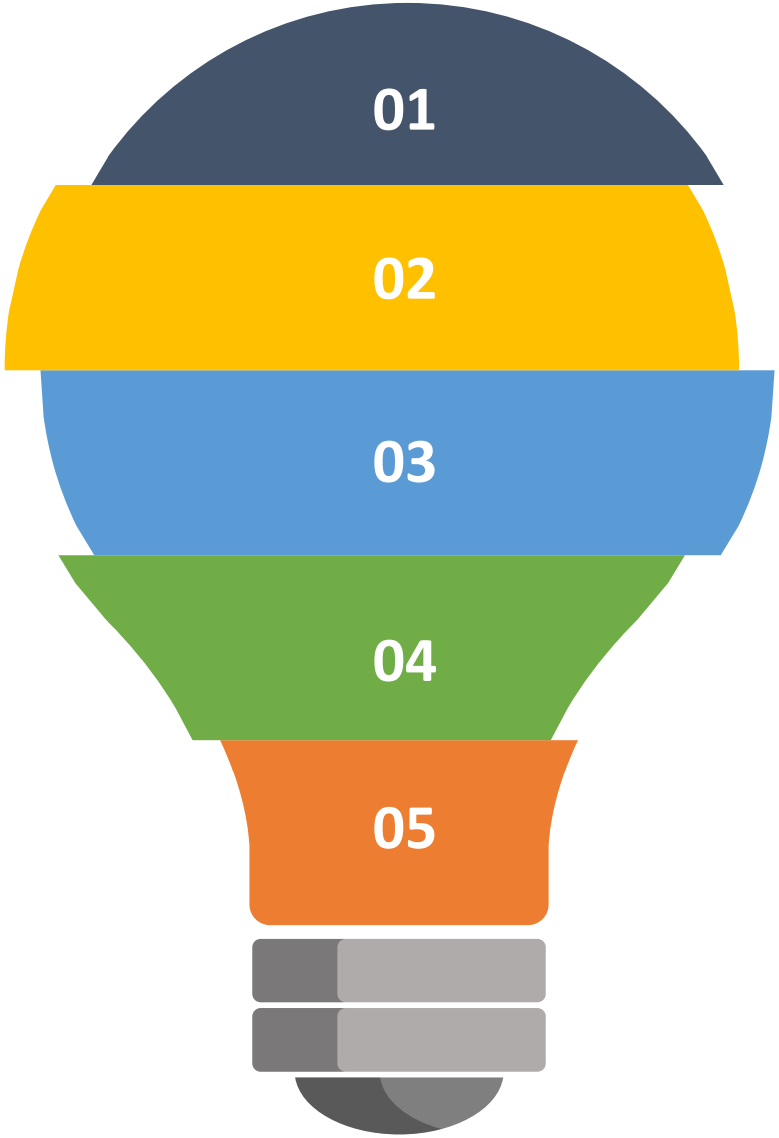
Survey topics



1. Approval
2. Approach
3. Evaluation and monitoring
4. Treatment and planning
5. Risks

Background

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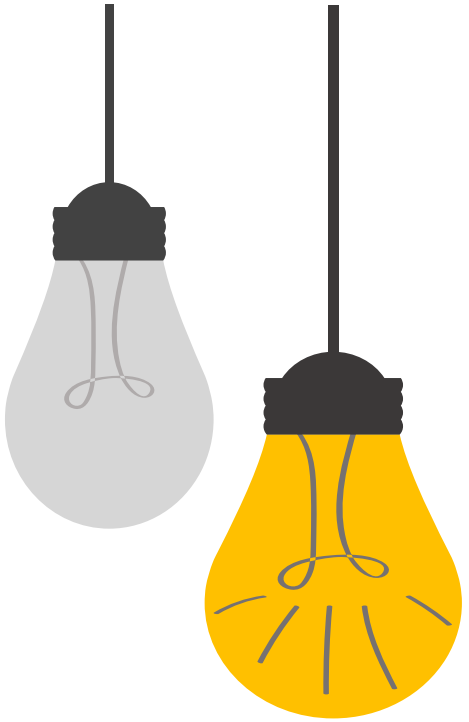

EMER member countries received a questionnaire on energy investment and were asked how is it regulated in their country and what policies and procedures are implemented by regulators.

12 EMER member countries responded to the questionnaire:

- **Armenia**
- **Bosnia and Herzegovina**
- **Croatia**
- **Hungary**
- **Kosovo**
- **Latvia**
- **Lithuania**
- **Moldova**
- **North Macedonia**
- **Poland**
- **Romania**
- **Oman**

Role of Energy Regulators

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The overall objective of energy regulators is to protect & balance the interests of consumers, investors, and government

Energy systems and infrastructure are highly dependent on national regulatory framework.

Regulation and market framework provides the ability to expand and attract the investment requirement not limited to the power generation and energy network, but also across the energy supply chain.

These are usually through:

Regulatory measures & incentive

- Identification of needs for new (expansion) capacity, project cost-benefit assessment, risk mitigation, and fair remuneration

Risk mitigation measures

- To avoid underinvestment or inefficient investments

ACER, 2023; European Commission

1 Approval Government body or bodies responsible for approving and evaluating energy investment projects

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Regulators in the following countries are the responsible party for **assessing** & **approving** energy investment projects:

- **Bosnia and Herzegovina**
- **Croatia**
- **Romania**
- **North Macedonia**
- **Latvia**
- **Kosovo**

Regulators in the following countries are responsible for **only evaluating** investment projects:

- **Armenia**
- **Moldova**
- **Oman**

Ministries in the following countries are involved in investment regulation approval process:

- **Poland**
- **Lithuania**

Hungary: policy or processes in regulating energy investments

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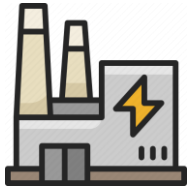
Environmental impact

Environmental impact assessment is required for large-scale electricity projects

Permits

Permits related to land use and construction for infrastructure projects



New connections

New electricity generation projects grid connection which involves coordination with TSOs and DSOs

Cross-border projects

Additional regulatory and policy requirements related to cross-border trading and infrastructure development

2

Approach - Types of regulatory approach to investment regulation

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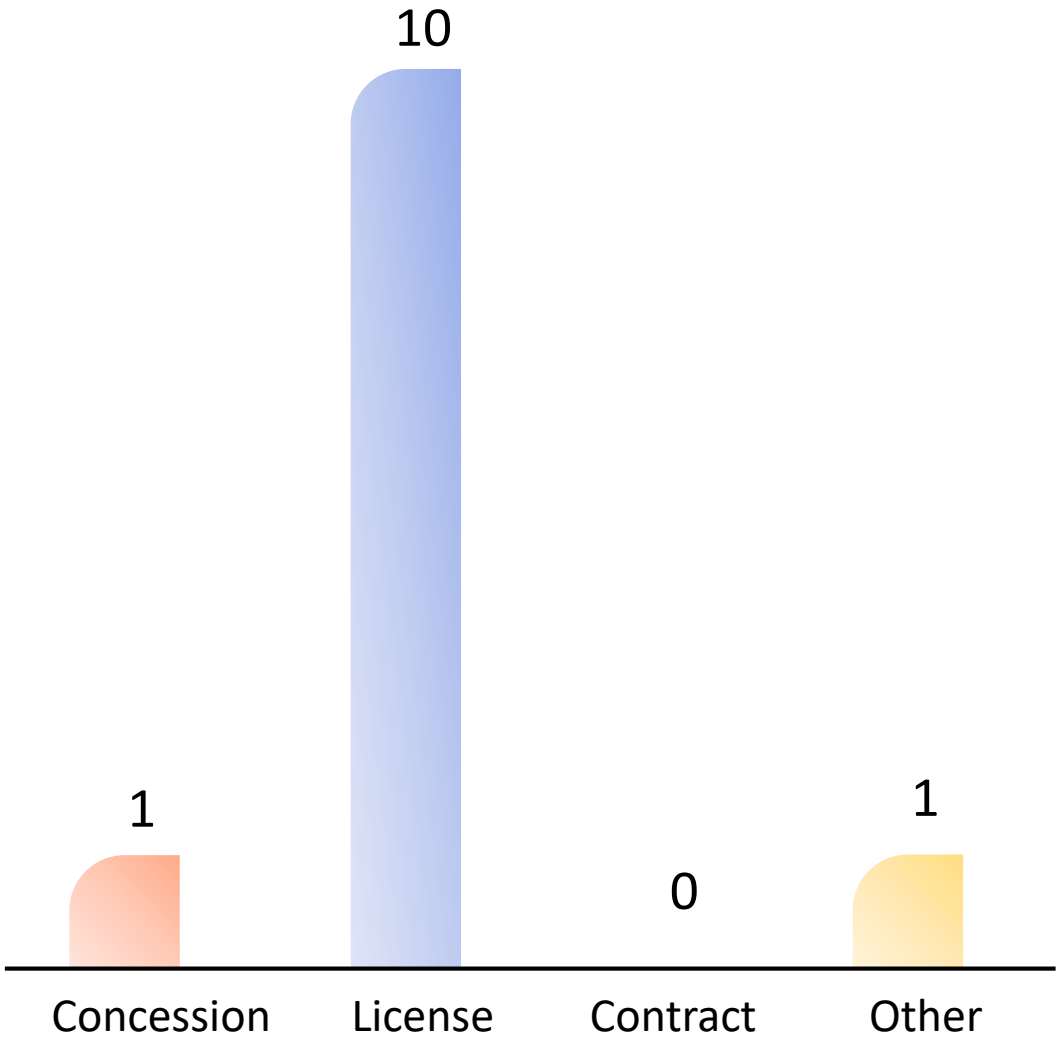
Regulation by license

10 out of **12** member countries regulate by license

Regulation by concession

1 out of **12** member countries regulate by concession



Regulation by contracts

No member country regulate by contracts

Other

1 out of **12** member countries regulate by other methods

Depreciation method - Does the regulatory framework allow depreciation front-load to improve the ability to fund capital expenditure projects?

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Regulator generally consider:

- **Straight-line depreciation –** depreciated at a constant rate over the life of an asset
- **front-loaded –** utility recovers most of the asset values at the initial years of asset life
- **progressive (back loaded) –** depreciation is greater at the later years of asset life

Allows for front loaded depreciation	Does not allow for front loaded depreciation	Other
• Armenia • North Macedonia • Kosovo	• Romania • Croatia • Moldova • Hungary • Lithuania • Oman	• Latvia - *only allowed for PCI relevant projects*

Stranded Assets - What is the regulatory approach to asset stranding?

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Recently Climate change and energy transition policy directives and goals has highlighted the issue of stranded assets. The treatment of Stranded assets have implications on consumers, investors, policy makers, regulators and organizations.

The treatment of asset stranding has regulatory implications on:

- Level of recovery
- Timeframe over the recovery – duration of regulatory periods
- Prices and tariffs
- Financial implications

Investment in energy needs to consider:

Investment Risk

- Managing the exposure of investments risks across sectors, geographies and asset classes so that financial institutions can avoid stranded assets

Financial stability

- Financial stability implications of stranded assets and what this implies for regulatory financial design and options

Carbon Lock in

- Previous ‘’carbon’’ commitment influences decarbonization plans developed by governments, and its implications on companies and investors

Simshauser, P. (2017)`; IRENA, 2017

Stranded Assets - What is the regulatory approach to asset stranding?

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Armenia

Linear depreciation approach to stranded assets

Moldova

Stranded assets are excluded from Regulatory Assets Base

North Macedonia

Identified stranded assets are excluded from Regulatory Asset Base

Romania

No specific provisions for stranded assets

Treatment of donor-funded assets

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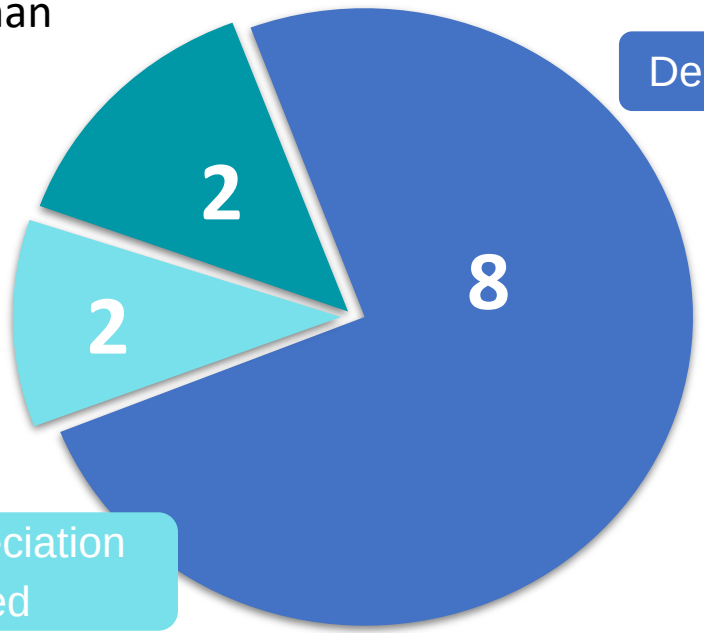
For donor-funded assets, are licensees allowed to charge depreciation?

Not applicable

- Hungary
- Oman



Depreciation not allowed

- Kosovo
- Romania
- Croatia
- Armenia
- Moldova
- N. Macedonia
- Latvia
- Bosnia & Herzegovina

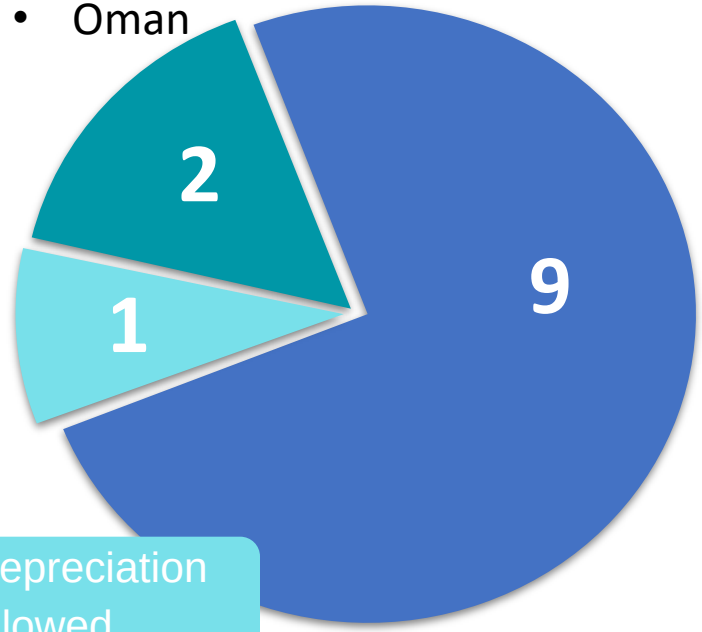
Depreciation allowed

- Lithuania
- Poland

For donor-funded assets, are licensees allowed to earn a return?

Not applicable

- Hungary
- Oman



Depreciation not allowed

- Kosovo
- Romania
- Croatia
- Armenia
- Moldova
- N.Macedonia
- Latvia
- Poland
- Bosnia & Herzegovina

Depreciation allowed

- Lithuania

As networks are subject to monopoly regulation. Has your agency explored capex in green field projects being undertaken by other investors? If so, what regulatory mechanisms were used to evaluate the investors?

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Regulatory capex in green field projects being undertaken by other investors.

- Kosovo
- Romania
- Croatia
- Armenia
- Moldova and North Macedonia
- Latvia
- Lithuania
- Hungary
- Oman

3 Evaluation and monitoring - What is the process of evaluation of an investment plan? What information do the licensees / investors require to submit in their investment proposals?

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Romania

- DSOs and TSO send the regulator investment plans for the regulatory period of 5 years and for each year
- DSOs and TSO send the feasibility study, with CBA and documents to present the necessity and the opportunity of the investment
- The regulator verifies all the documents for a certain number of investments chosen randomly

Bosnia and Herzegovina

- DSOs submit a tabular overview of the planned investments
- Each investment contains a detailed set of data of the following:
  - Type of object
  - Type of works
  - Name of the project
  - Expected result of the investment
  - Reason for the investment
  - Total value of the investment
  - Planned sources of financing
  - Expected date of completion

3 Evaluation and monitoring - What is the process of evaluation of an investment plan? What information do the licensees / investors require to submit in their investment proposals?

Armenia

- Licensee submits the purpose and main directions of the investment program
- Licensee submits justifications for the need to invest in each of the main directions
- Assessment of investment volume, implementation schedule and expected results in each of the main directions
- Licensee submits sources and terms of project financing

Lithuania

- Process of evaluation depends on type of investment projects (10 years development plan, annual list of projects etc.)
- Investors are required to submit status of ongoing projects, sources of funding and technical details if required
- Assessment of the financial strength of the company is carried out
- Investment plan needs to justify the technical need of the project and the financial/economic profitability of the project

Poland: Evaluation and monitoring mechanism

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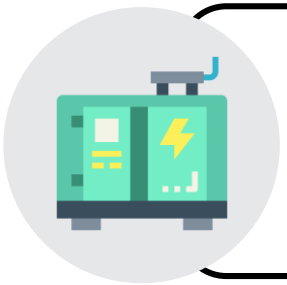
Combined heat power

Entity that receive support system submits annually a report confirming the volume of energy from high-efficiency cogeneration.

Electricity generator (>50 MW)



Investment plan updates are submitted to the regulator presidency every 2 years. The updates are compared with previously submitted reports.

TSO/DSOs

Investment plan updates are submitted to the President of the regulator every 2 years. The updates are compared with previously submitted reports.

RES

Generators benefiting from operating support for electricity generation are subject to mandatory accumulation of state aid.
Any investment aid or other support previously received or granted to any beneficiary must be taken into account when determining the support price in both the auction system and FIT/FIP systems, as well as in the dedicated offshore support system.

What financial criteria are used to evaluate the reasonableness of capital expenditure plans (IRR/NPV/CBA)? Are the financial criteria applied equally to all types of capital expenditure projects (irrespective if the project is categorized as a project for security of supply, grid replacement, grid modernization, load related, non-load related, etc.)?

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The following table illustrates the financial analysis method used in each of the **12 member countries:**

Country	NPV	CBA	PI	IRR
Armenia	✓			✓
Croatia	✓			✓
Hungary	✓	✓		✓
Kosovo	✓	✓		✓
Lithuania	✓			
Moldova		✓		
North Macedonia			✓	
Poland		✓		
Romania	✓		✓	✓
Oman	✓			

4 Treatment and planning - How do you determine investment planning? What is the duration of the investment planning (3, 5, 10 years or more)?

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- Duration of investment plans varies from one country to another
- In some countries, there are several durations of investment plans
- For example, in **Lithuania**, they differentiate between development and individual plans, setting it for 10 years for development plans and it is for 5 years for individual projects and listed projects
- In **Poland**, in the case of investment plans of electricity generators with units of installed capacity > 50 MW, the investment plans cover a fifteen-year period.

1 year

- Romania
- Bosnia and Herzegovina
- Moldova

3 years

- Armenia
- Moldova

4 years

- Oman

5 years

- Romania
- Kosovo
- Moldova
- Lithuania

10 years

- Croatia
- Latvia
- Lithuania

15 years

- Poland
- Oman

How do you handle a project which was not part of the investment planning?

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Armenia

- Investment not considered urgent are excluded from tariff calculation.
- in cases of urgent investments the licensee should notify the regulator

Bosnia & Herzegovina

- Any requirements for investment proects that are not included in the planning are required to be justified.
- Justified projects/costs are included in the following regulatory period.

Kosovo

- Rules in place provides possibilities for utilities to make request for any new or substation of the projects

North Macedonia

- Project will be assessed additionally

Croatia

- The regulator accepts new projects in exceptional cases, which should be elaborated by operators

Latvia

- Every year system operator update investment plan

Lithuania

- Project evaluated individually

Romania

- Annually until October, the investment plan can be modified. Moreover, the regulator can approve additional investments, necessary investments and which investment appeared in the last months of the year

Hungary

- Not applicable

Moldova

- Not accepted in the tariffs

Poland

- Not applicable

Oman

- Subject to ex-post adjustment
- emergencies,''force majeure''may be invoked which allows for reasonable compensation without re-opening the price control

5 What are the main risks in electricity investment in your country? (For example, these could be policy, permitting, financial, cost recovery/tariff, grid interconnections)

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The following are common risks from energy investments in member countries:

Approvals/permits

Risk of obtaining approvals/permits from the Government

Cost recovery

Risk of cost recovery and tariff implications due to electricity price fluctuation

Price volatility

Risk of price fluctuation of raw materials

Finance

Risk of sufficient project finance

Conclusion

Approval

- Regulators are involved in the process of approving and assessing energy projects in all member countries
- Most countries have set regulatory policies and processes

Approach

- Regulation by licenses is applied in most member countries
- Most regulators apply straight – line depreciation
- 3 regulators consider front-loaded depreciation within the regulatory framework

Evaluation and monitoring

- Investment plans submitted to regulators should contain justifications on reasons behind the investment project, sources of funding and technical details for regulator's evaluation

Treatment and planning

- Member countries differ when it comes to how long investments are and it ranges from 1 year to upto 15 years depending on the type of energy project
- Justification is required for projects that were not part of the plan submitted initially to regulators
- Type of investment determines the inclusion in rate base and tariffs

Risks

- Common risks can be seen in member countries such as price fluctuation, obtaining approvals and having sufficient project finance

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THANK YOU FOR YOUR ATTENTION!

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Renewable Energy Incentives

1. **Incentives driven by policies** - subsidies, tax incentives, accelerated depreciation
2. **Incentives based on market interactions** – based on relationships of market participants
3. **Energy efficient finance** - improvements in the field of efficient use, distribution, and storage of energy.

incentives targeted at renewable energy promotion can :

1. **Financial** – incentives (FIT), reverse auctions, tax policies& net metering
2. **Regulatory** - clean energy standards, cap and trade, and carbon pricing.

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Regulatory regimes in a national context – considering TSO

- Investment requirement
- Cost of Capital
- Efficiency levels
- Tariff Impact

Generation investment regulation in different jurisdictions

Bosnia and Herzegovina

Deregulated activity

The regulator issues a final permit/license for the production of electricity to investors when it concerns the activity of production. Within the scope of the license, there are defined obligations to which the producers must comply with during the period of validity of the license

North Macedonia

Open market

The regulator is not responsible for regulating investments in generation. This is because producers operate freely in an open market. Only if the Government proclaims a generation project as a strategic project then it will be based on PPA.

Poland

Minimum 50 MW

In the case of power plants with minimum installed capacity of 50MW, the President of the authority only collects and analyzes investment plans of generation companies.

energy investments - Has your agency explored capex in green field projects being undertaken by other investors? If so, what regulatory mechanisms were used to evaluate the investors?

Hungary

Since 1 May 2019, the regulator issues and handles green premium (METÁR) tender calls for RES electricity projects on request of the Energy Ministry in charge

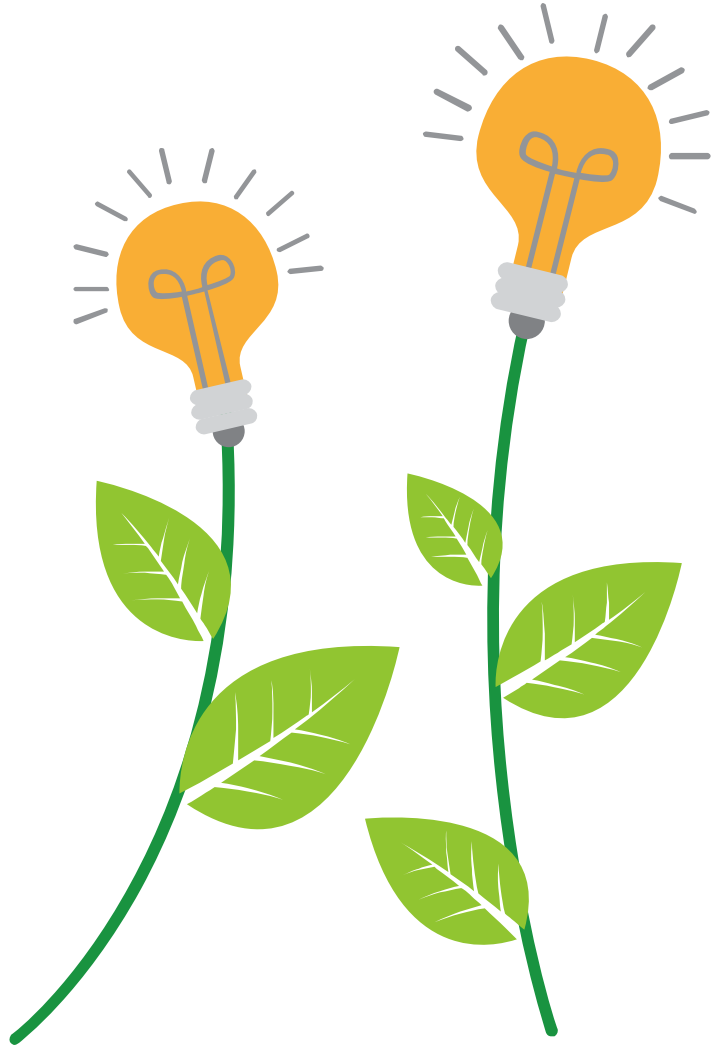
The regulator also monitors regularly the number and capacity of household sized power plant projects, mainly PV

Romania

There are three major green financing programs taken into consideration in regulating investments in generation in order to facilitate the expansion of renewable energy, that are expected to become available in 2023: the Modernization Fund, the Contracts for Difference for offshore wind energy and the Innovation Fund.

Bosnia and Herzegovina

the Regulatory Commission has adopted the Rulebook on the methodology of determining guaranteed purchase prices of electricity from plants for the use of renewable energy sources and efficient cogeneration



Overlapping policy or processes

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Overlapping regulatory or policy requirements and approval processes in member countries

Areas of electricity investments in your jurisdiction that have overlapping regulatory or policy requirements, and approval processes

9	No overlap of policy and process
1	Environmental decisions and buliding permits
1	Other