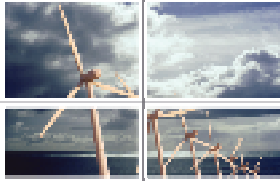


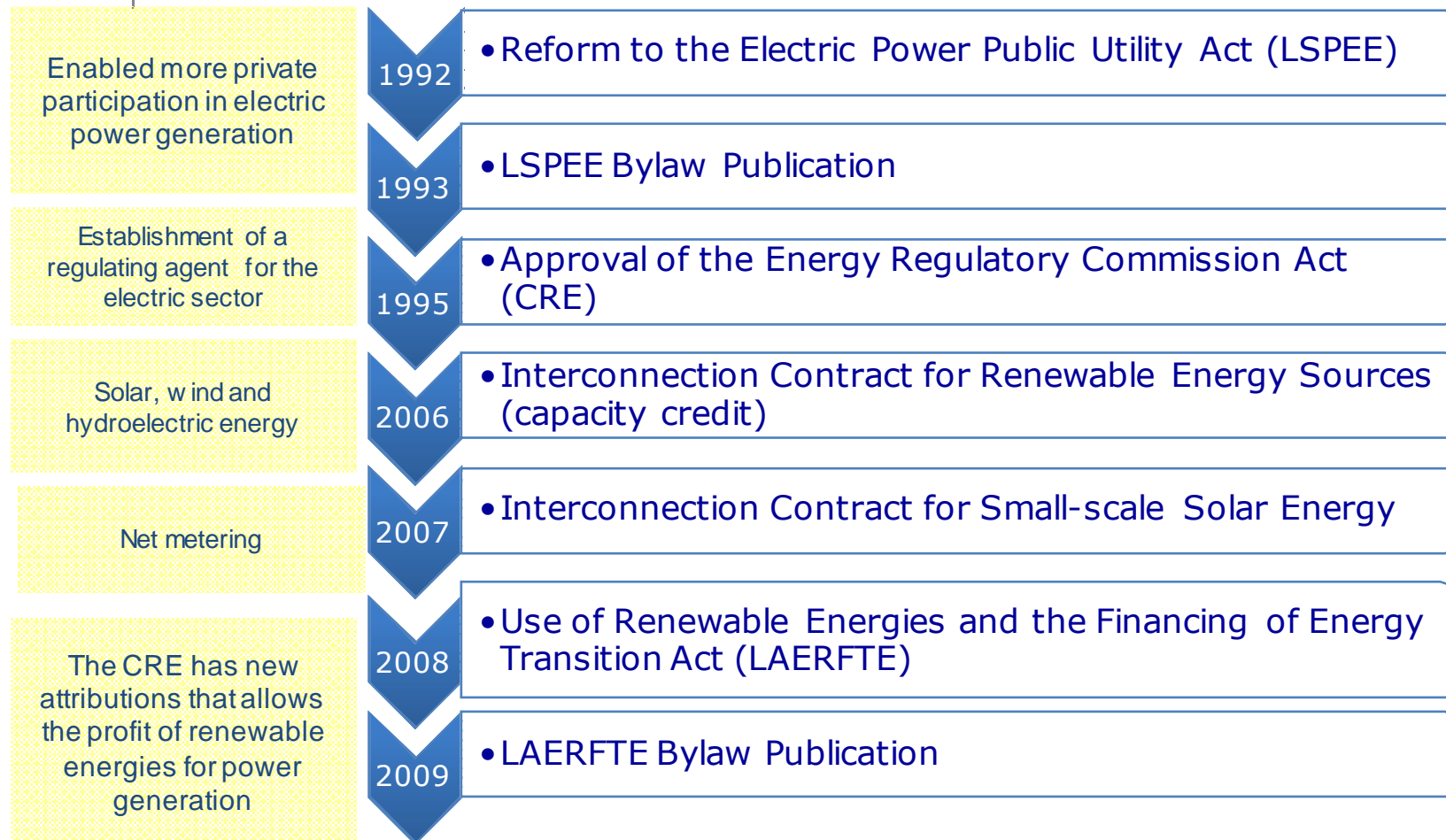
Regulation for Renewable Energy Sources

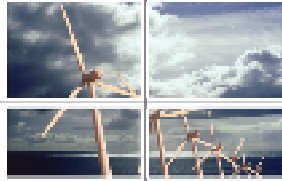
TERNA Expert Dialogue 2009

November, 2009



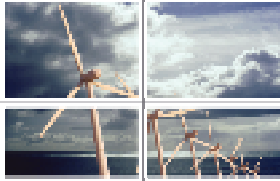
Legal Framework



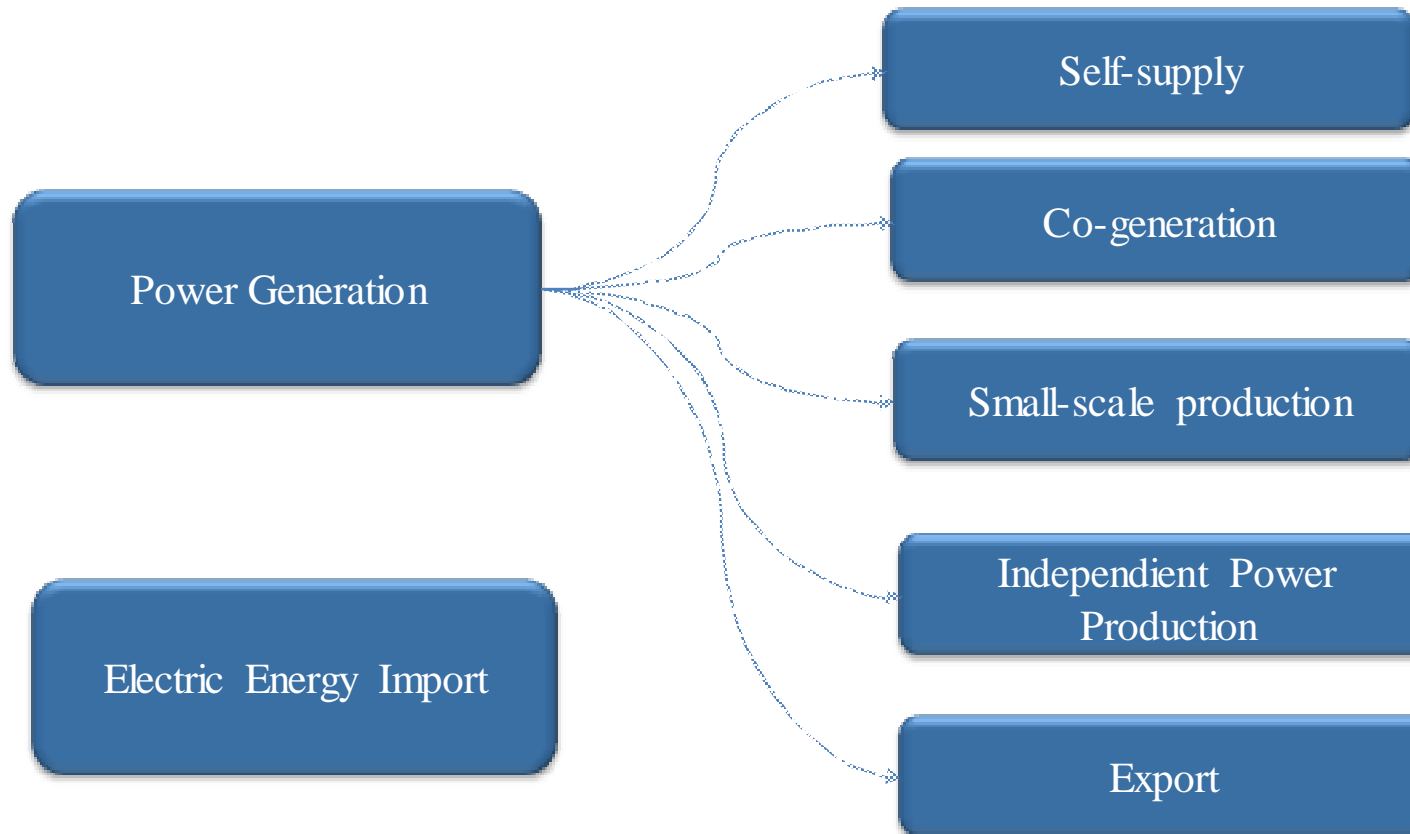


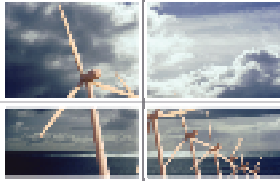
Energy Regulatory Commission Act

- To allow private participation in the generation, export and import of electric power.
- To grant and revoke power generation permits.
- To approve and draw up model agreements and contracts.
- To approve the methodology for transmission charges (wheeling)
- Approve the criteria and basis for determining the amount of contributions to the achievement of specific works, extensions or modifications of existing ones.

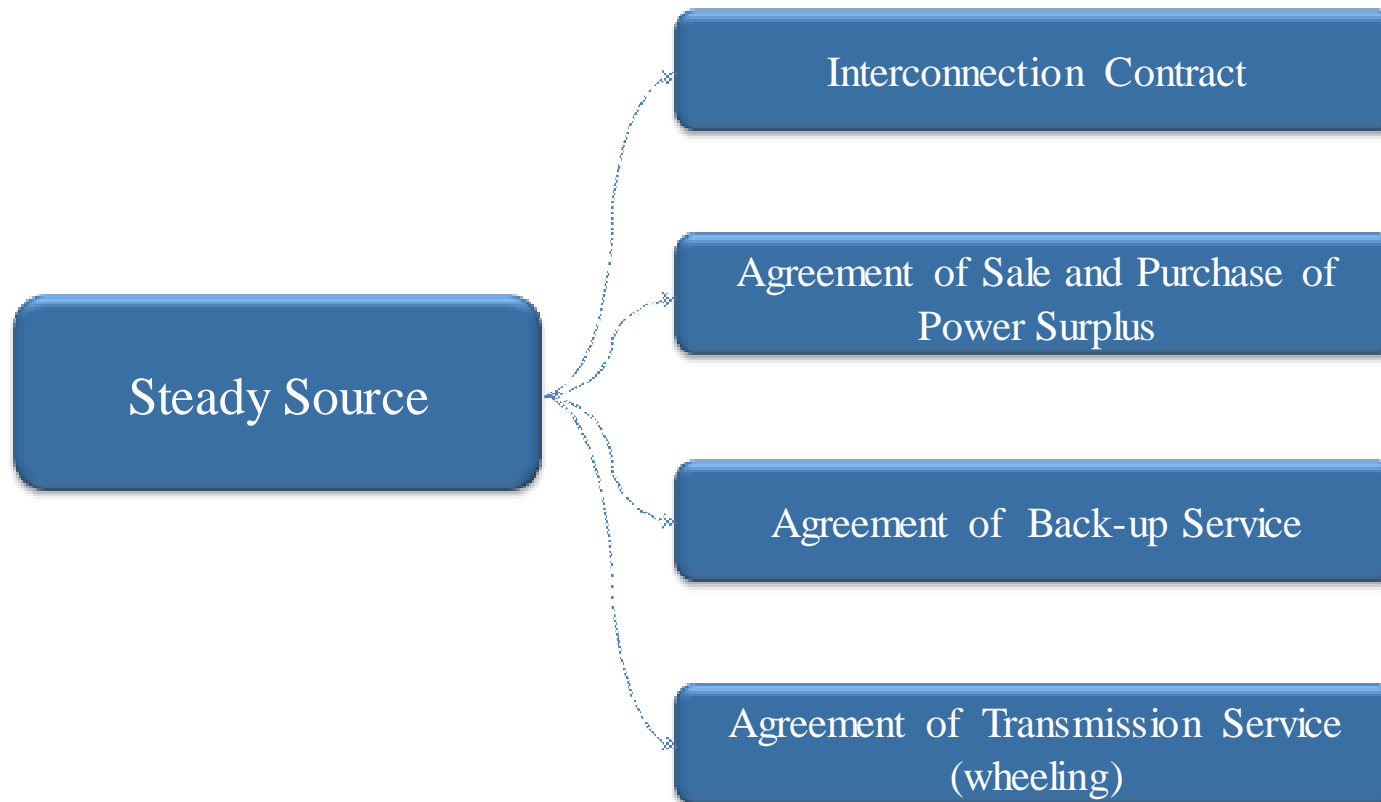


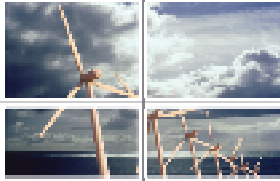
Permits



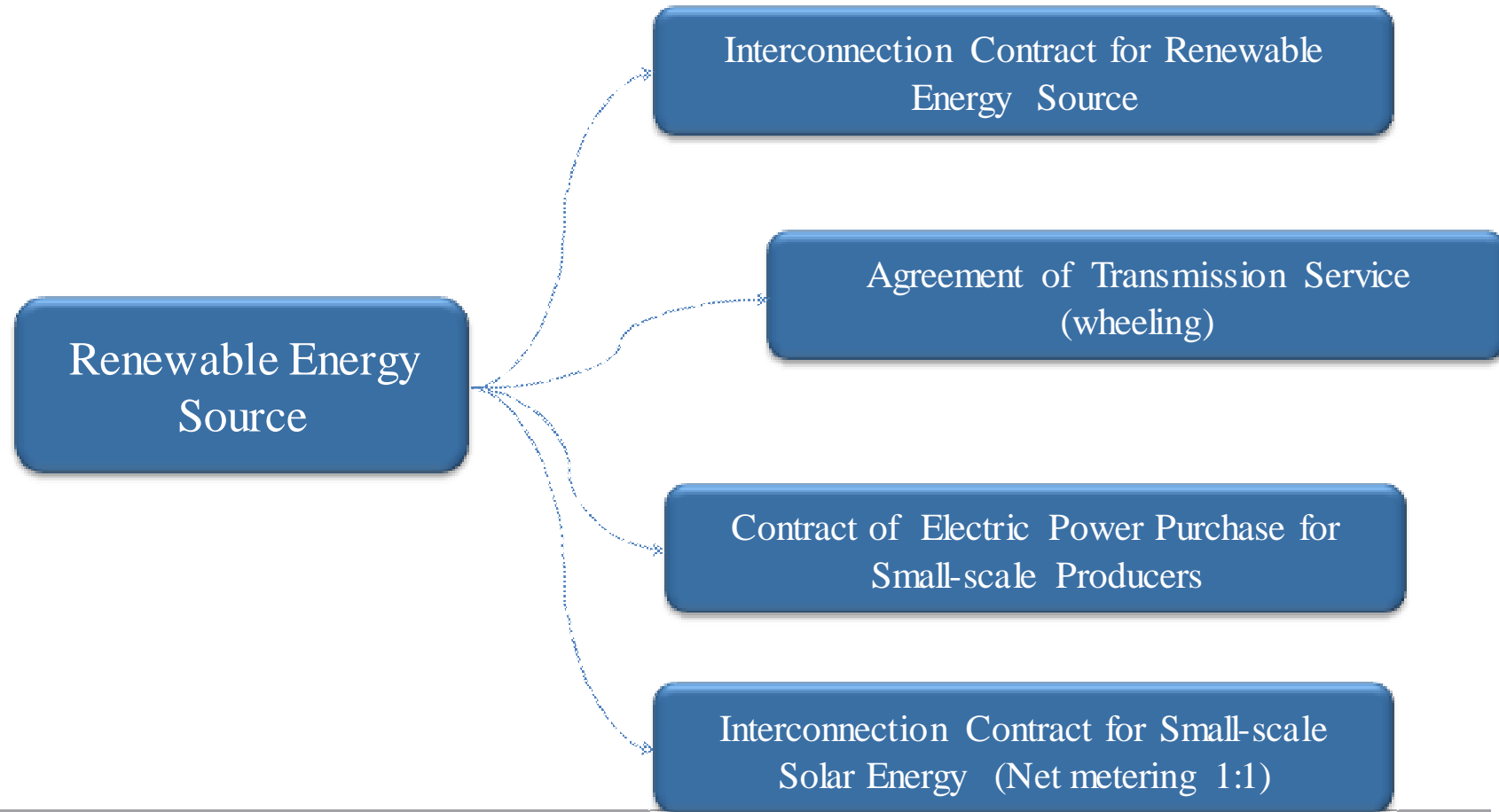


Regulatory Instruments (1)



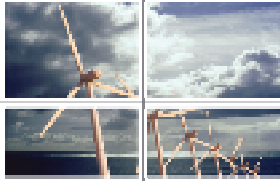


Regulatory Instruments (2)





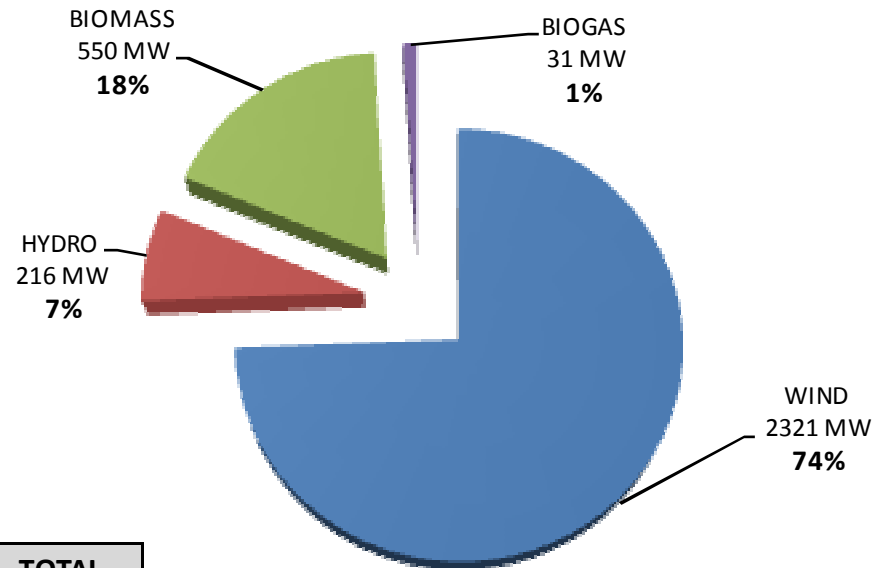
STATISTICAL INFORMATION OF POWER GENERATION PERMITS



Current Permits using Renewable Energy Sources

- The CRE has approved **97** power generation projects to permit-holders and they represent **3,121 MW** of renewable energy capacity.
- There are **24** permits operating, which represent **772 MW** of installed capacity.

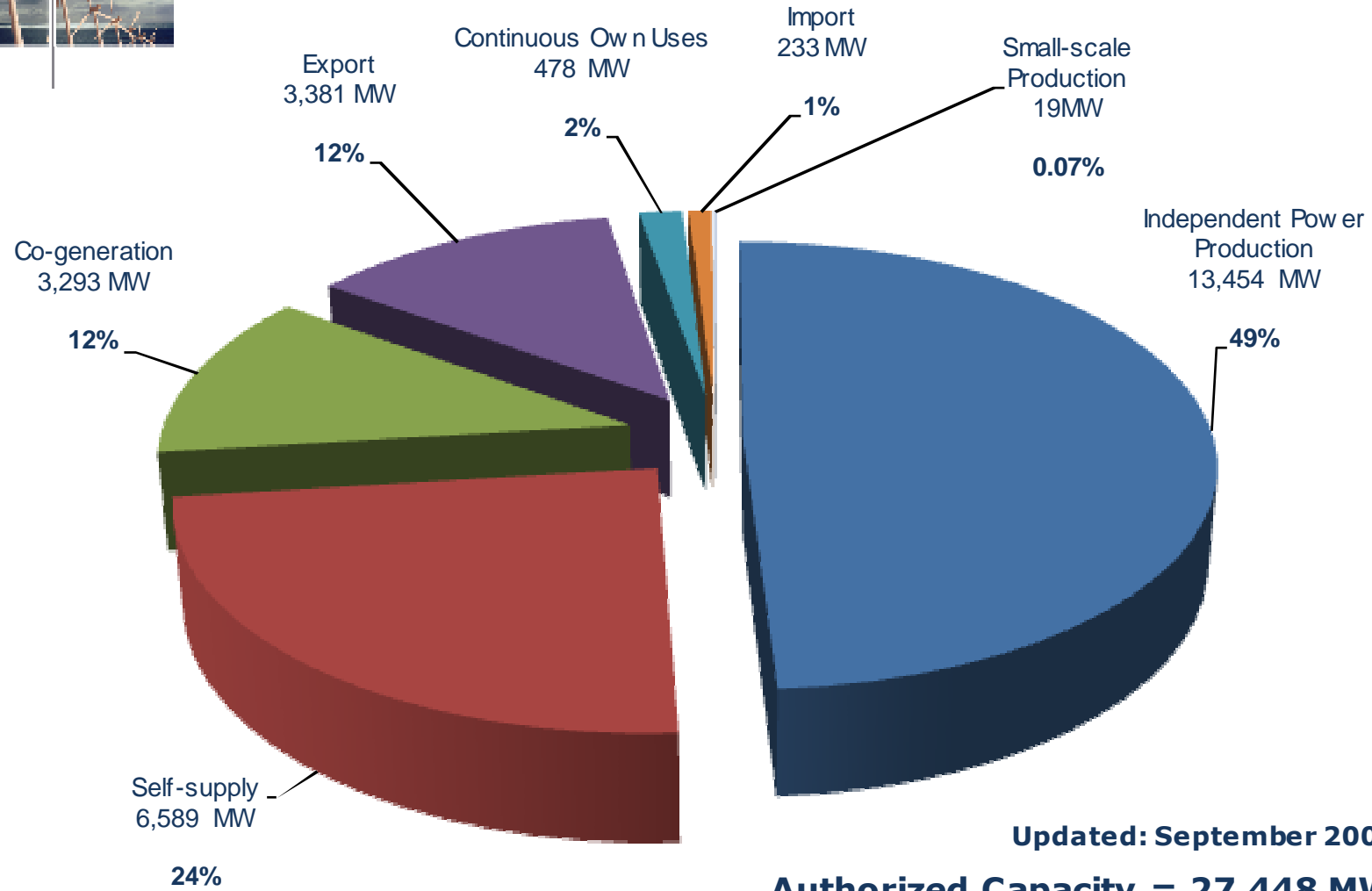
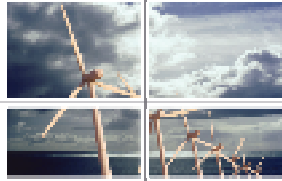
Self-supply authorized capacity for renewable energy sources

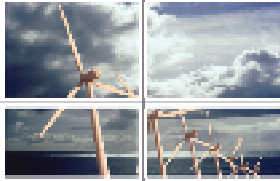


Self-supply Authorized Capacity (MW)

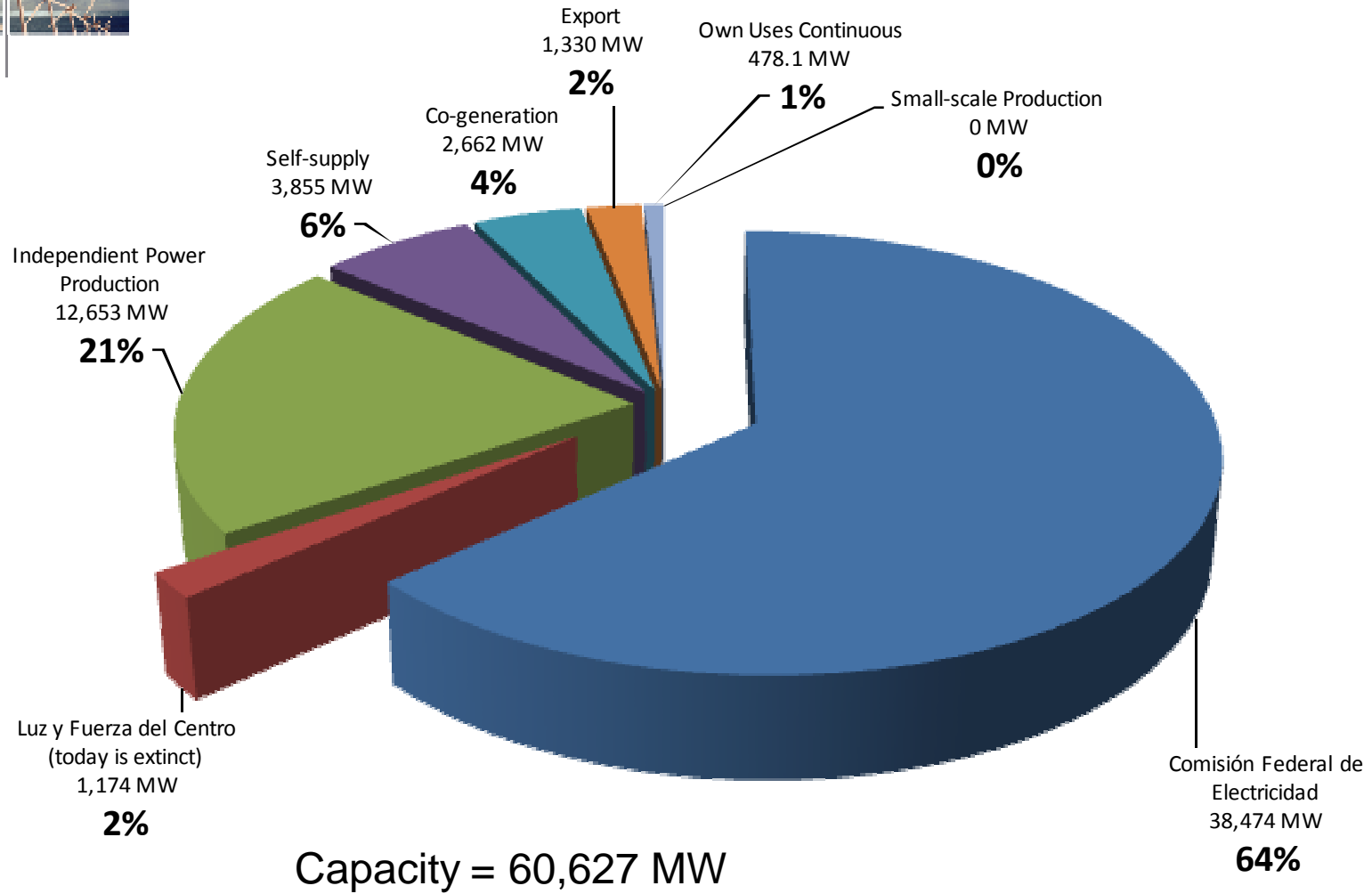
	WIND	HYDRO	BIOMASS	BIOGAS	TOTAL
PERMITS	17	23	51	6	97
IN OPERATION	159.9	105.1	475.4	31.7	772.1
DEVELOPING	2,161.7	104.3	75.4	-	2,341.3
INACTIVE	-	7.5	-	-	7.5
TOTAL	2,321.6	216.9	550.7	31.7	3,120.9

Authorized Capacity by modality





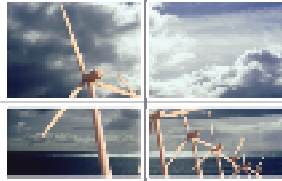
Installed Capacity in Electric National System, 2008





Principles underpinning the new legal framework

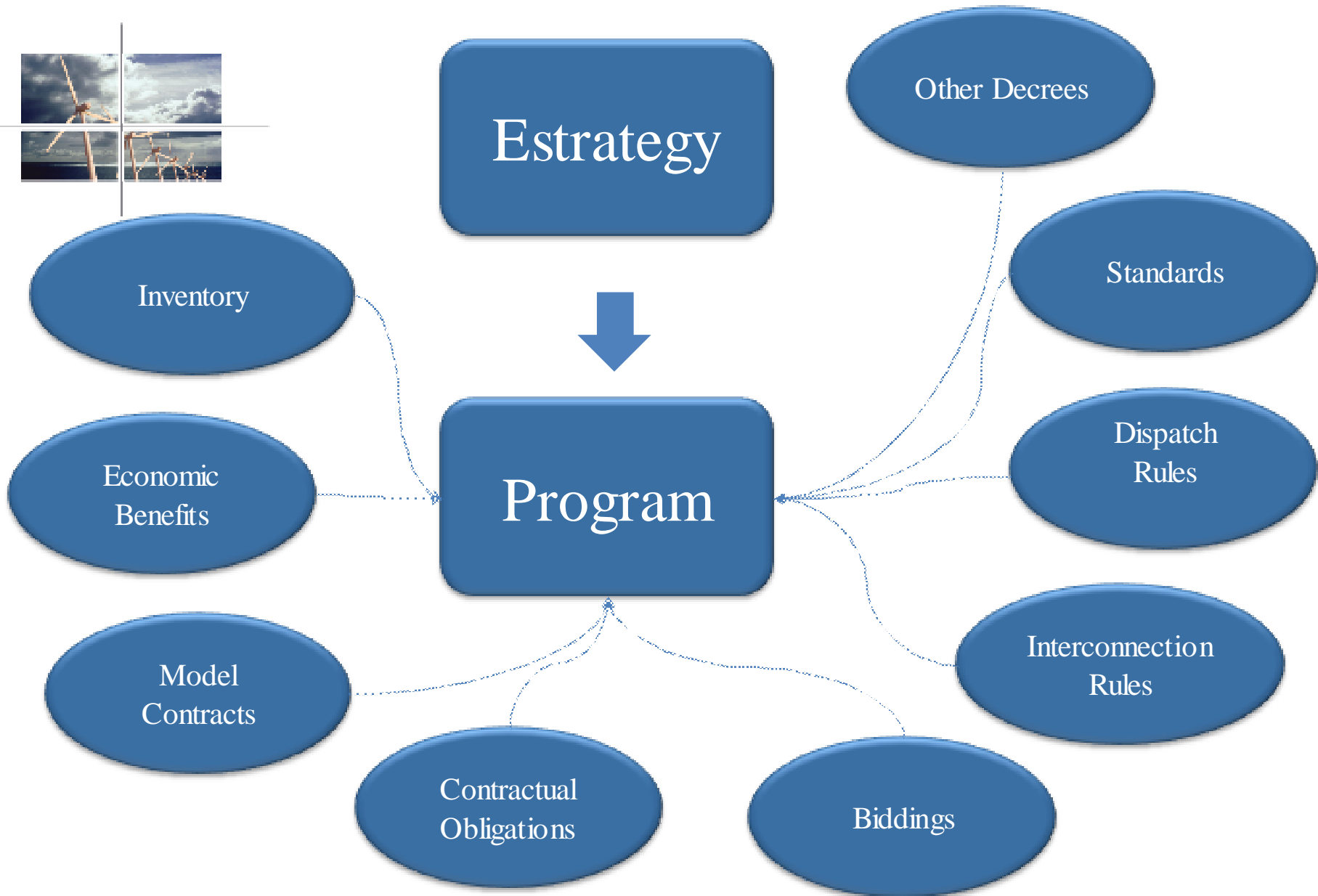
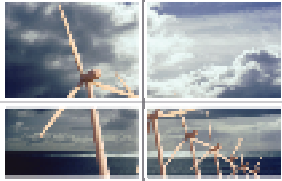
- The Use of Renewable Energies and the Financing of Energy Transition Act and its Bylaw (LAERFTE) establish the following principles:
 - Institutional strengthening for the Ministry of Energy (SENER) and Regulatory Energy Commission (CRE);
 - A Program and National Strategy in this area;
 - Evaluation of projects with net economic benefits, and
 - Economic regulation and removal of barriers.

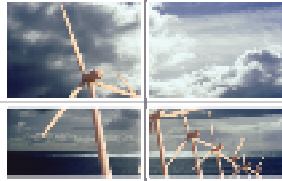


CRE Functions (articles 7, 14-20)

- Issue rules, guidelines, methodologies and other policy tools for power generation.
- Develop tools for the contractual obligation.
- Revision of dispatch rules.
- Issue methodologies to determine the contribution of renewable energy capacity.
- Issue interconnection rules, request procedures for exchanging energy and compensation systems.

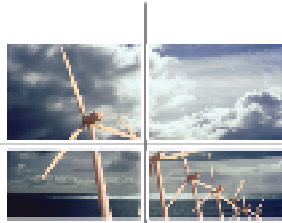
Note: All of these also apply to co-generation.





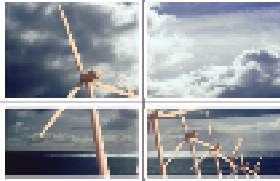
Planning

- The national inventory of renewable energy will integrate the information about the potential of different renewable energy sources.
- To determinate economic benefits were considered: savings to Electric National System (SEN); capacity contribution; advantages for future users without acces to electricity grid; lower risks and costs for the combination of technologies; reduced negative externalities; such other benefits like financial (the emission of carbon credits, among others).
- The Special Program for the use of renewable energies, will have binding targets for renewable generation and co-generation, construction of power network, rural electrification.



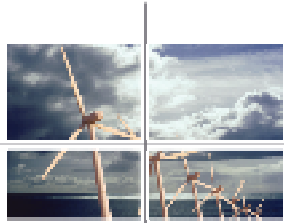
Regulatory Instruments

- Criteria and methodologies for calculating contractual obligations and model contracts for small-scale production and independent power production.
- Criteria, methodologies, model contracts, energy exchange procedures and corresponding compensation systems for self-supply projects.
- Methodologies for:
 - Calculating the compensation for services rendered between the supplier and generators.
 - Determinate capacity contribution.
- General rules of interconnection to the SEN
- Guidelines and mechanisms to promote the development of renewable generation and efficient co-generation.
- Guidelines for contracts between public supplier and generators.



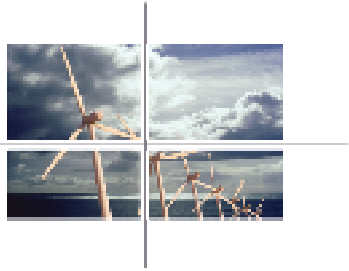
Biddings

- They shall be carried out by the supplier in accordance with the goals established by the Program.
- The CRE will develop the necessary criteria and methodologies for determining applicable maximum contractual obligations, according to the following schemes:
 - Contractual obligations for capacity and energy payments that reflect the fixed costs, including a reasonable return on investment and variable costs incurred by the permit-holder.
 - A contractual obligation for power unit payment to incorporate the concept of capacity and energy compensation.

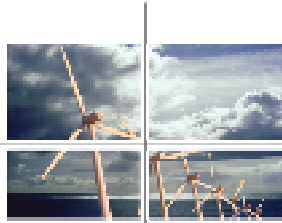


Projects outside biddings

- The CRE will publish model contracts and precedence rules governing the acquisition of energy by the supplier produced by generators and regulate the respective contractual obligations.
- They may receive a contractual obligation (determined by the CRE) for capacity and associated energy, when they are within the targets set in the Program.
- The agreements provide mechanisms to encourage units that are available in peak hours.
- Agreements between the supplier and Pemex co-generation projects will contain arrangements to achieve integrated management of electric and thermal energy and meet minimum efficiency criteria set by CRE.

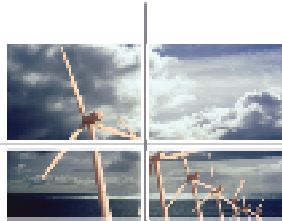


TECHNOLOGY TRANSFER



Intellectual property rights (1)

- The Electrical Research Institute (IIE) has been proactive in applying for and obtaining patents. This was mentioned in the "Reviews of Innovation Policy, 2009" of OECD.
- IIE has submitted before the Patent Office 91 patent applications; 21 of them are pending, 39 have been granted and 31 had expired.
- IIE has an Internal Patent and Industrial Property specialist who is an engineer and lawyer with experience in the Field that prepares and submits Patent Applications into Patent Office also. He is also Secretary of an IIE Transfer of Technology Committee wherein are also included Directors and Managers of most of areas of IIE.



Intellectual property rights (2)

- Also it is Registered the Trade Mark IIE for products and Services.
- All the procedures are located in IIE Intranet to be known by all the researchers.
- Several Spin Offs from IIE to conform Separate Businesses, has been constituted paying royalties to IIE.
- Also IIE has Businesses Partners Agreements with other Research Centers or Industries to joint ventures.
- Software is not patented because it is not allowed by law. However same is registered at National Register of Authors Wrights. IIE has about 500 Software registers.



Technology transfer experience (1)

- Wind energy in Mexico is at its early stage.
- Current projects use imported technology.
- Unintended technology transfer is the main benefit of status quo in Mexico (i.e. capacity building for national engineers and enterprises during the construction and commissioning phases).

Intended technology transfer:

- **Development of the Mexican Wind Machine** – 1.2 MW - (Maquina Eólica Mexicana), especially designed for operating conditions in the Mexican region of la Ventosa.
- 100% national technology, developed by the Electrical Research Institute (IIE) in a joint Venture with the Monterrey-based Mexican Group Rum Pump.



Technology transfer experience (2)

- The objective is to create a domestic supply chain, including generators, gears, blades, towers, and other components required for installation and operation of wind generators, as well as capacity building for design, operation and installation of wind projects.
- Further investments required to complete the design stage is intended to be financed through National (i.e. CONACYT's – National Council for Science and Technology - Sustainability Fund) and International Funds (GEF and BID).
- Completion of all stages expected within the next 2.5 years.



iThanks!

www.cre.gob.mx

www.iae.gob.mx