

III Semana de la Energía

Bloque SEforALL: Seminario Regional de Energía Renovable



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Innovation: Rethinking Energy systems and tracking SDG7 as a prerequisite for Sustainable Energy

ECLAC's Project 'Regional Observatory on Sustainable Energy'

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CEPAL



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Outline

1. How innovative is the LAC region ?
2. ECLAC's energy vision
3. Innovation and the SDG7 in the LAC region
4. Regional Observatory on Sustainable Energies (ROSE)

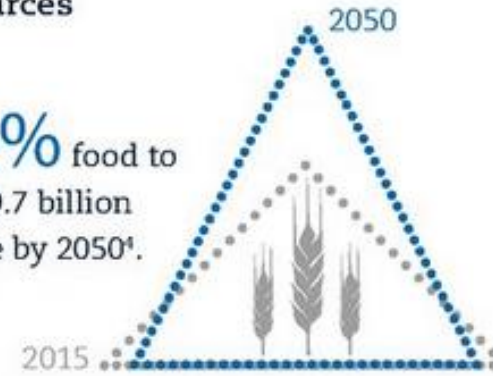
1.1 Global collective challenges requires innovative solutions



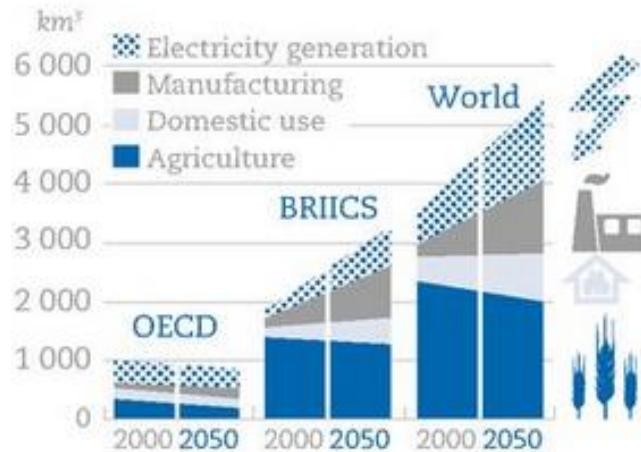
Growing tensions on water-food-land resources

52% of agricultural land is already affected by moderate to severe degradation³.

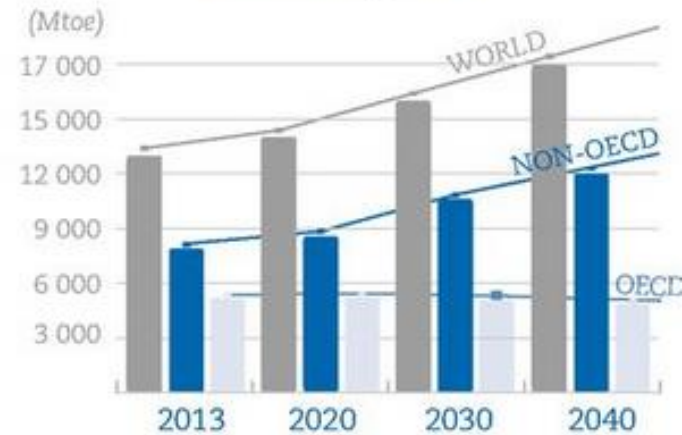
+60% food to feed 9.7 billion people by 2050⁴.



+55% water demand by 2050⁵.



+37% increase in global energy demand by 2040⁶.



Economic growth in non-OECD will drive further increases in global energy consumption. Asia will account for around 60% of the total increase⁶.

1.2 LAC region is lacking innovation according to the Global Innovation index

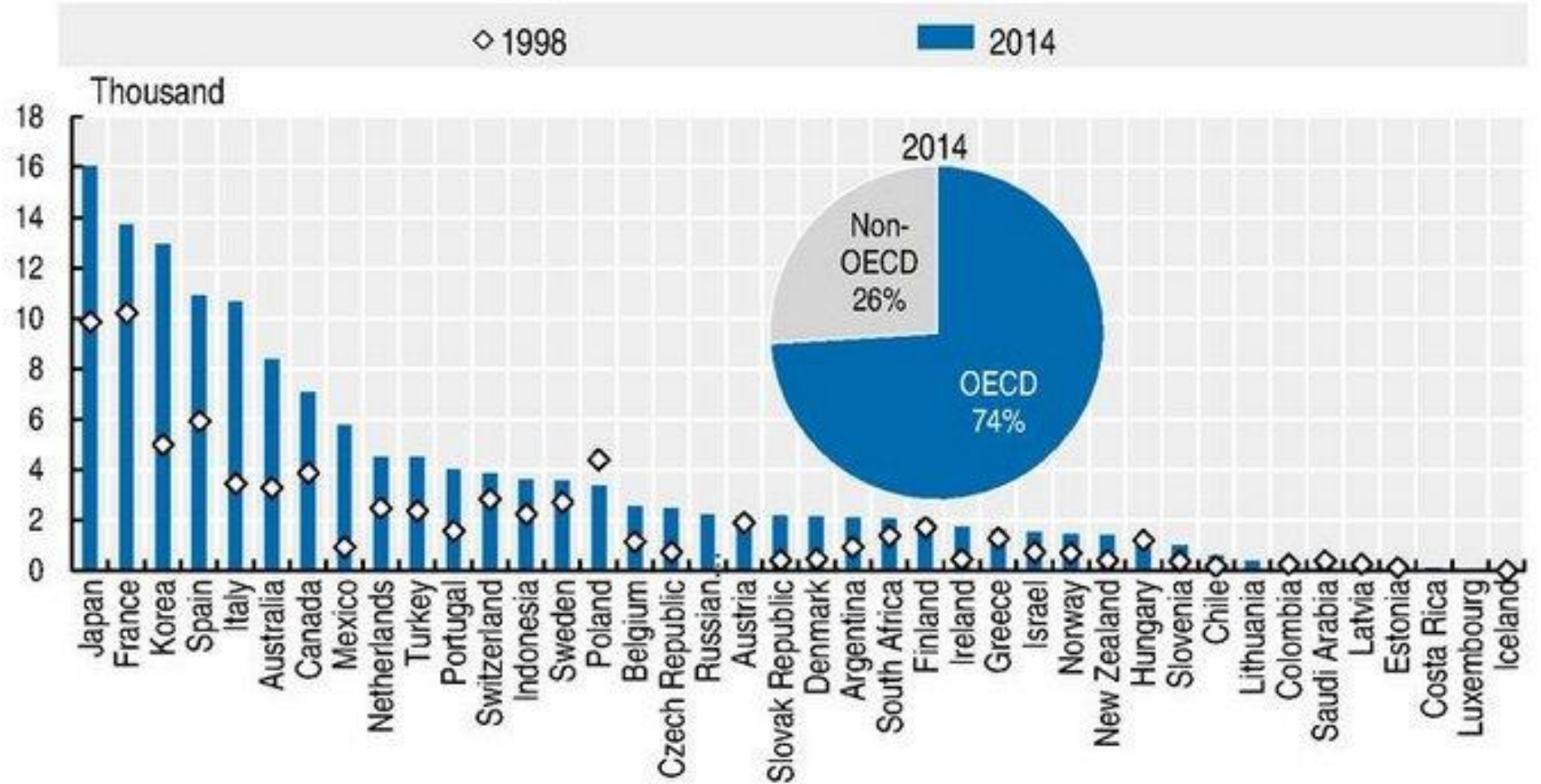
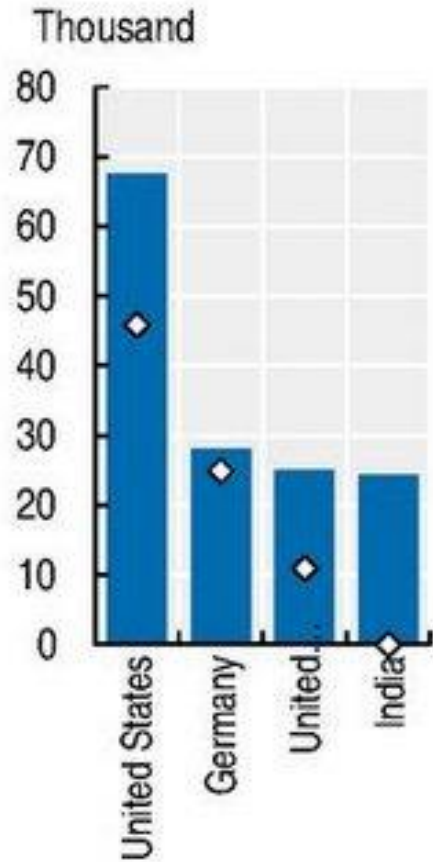
Global Innovation Index 2018 rankings

Country/Economy	Score (0–100)	Rank
Switzerland	68.40	1
Netherlands	63.32	2
Sweden	63.08	3
United Kingdom	60.13	4
Singapore	59.83	5
United States of America	59.81	6
Finland	59.63	7
Denmark	58.39	8
Germany	58.03	9
Ireland	57.19	10
Israel	56.79	11
Korea, Republic of	56.63	12
Japan	54.95	13
Hong Kong (China)	54.62	14
Luxembourg	54.53	15
France	54.36	16
China	53.06	17
Canada	52.98	18
Norway	52.63	19
Australia	51.98	20
Austria	51.32	21
New Zealand	51.29	22
Iceland	51.24	23
Estonia	50.51	24
Belgium	50.50	25
Malta	50.29	26
Czech Republic	48.75	27
Spain	48.68	28
Cyprus	47.83	29
Slovenia	46.87	30

- Chile #47
- Costa Rica #54
- Mexico #56
- Uruguay#62
- Colombia#63
- Brazil#64
- Panama#70
- Peru#71

1.3 There is no innovation without Research

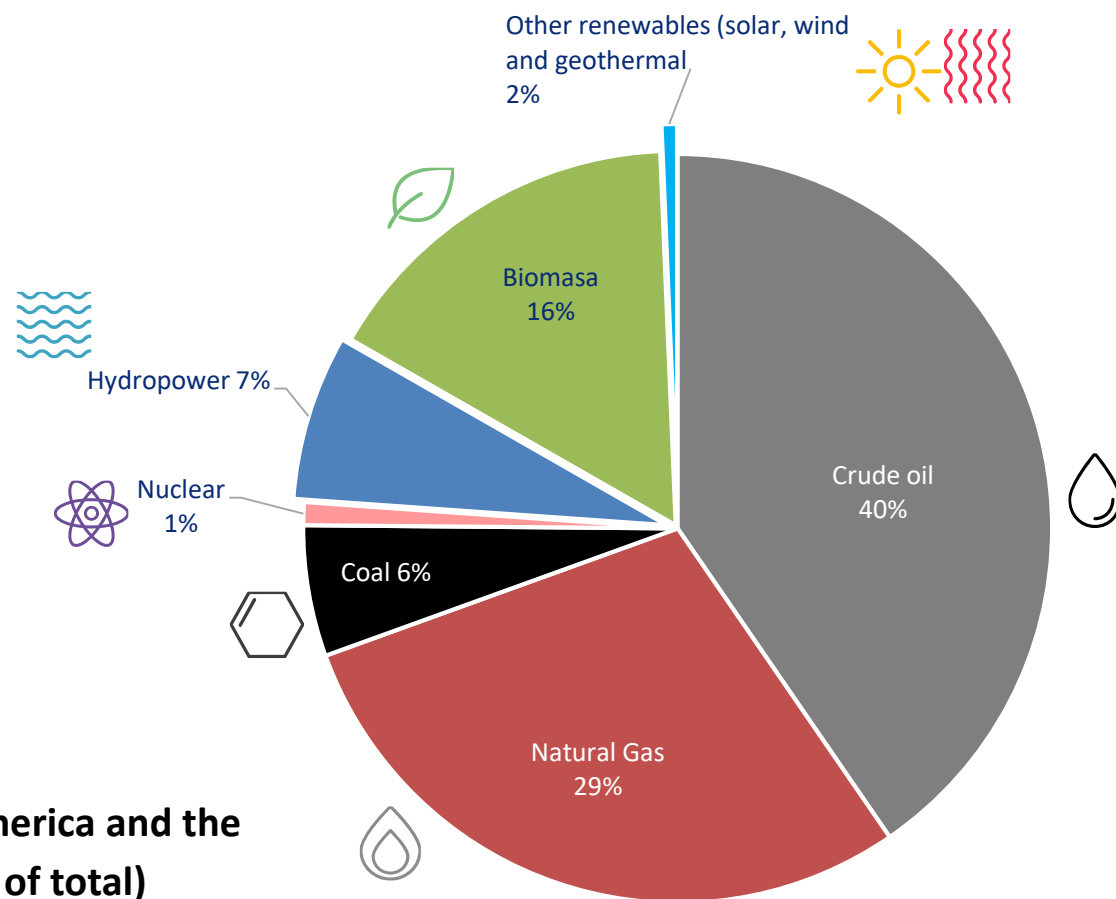
Latin America and the Caribbean region is way behind in number of researchers compared with other regions



2. ECLAC's energy vision

1. Changing the energy matrix towards a more sustainable and efficient one
2. Universal access to sustainable and quality energy, key to equality and social inclusion
3. Energy as a driver for **structural change, digitalization** (Big data and AI) and **increased productivity** (energy policies and investments linked to other sectors - Big Environmental Push)
4. NEXUS –Energy/Water/Food/Health

3 There is **no innovation** without energy and consequently no sustainability without renewables – **LAC Matrix still dominated by fossils**

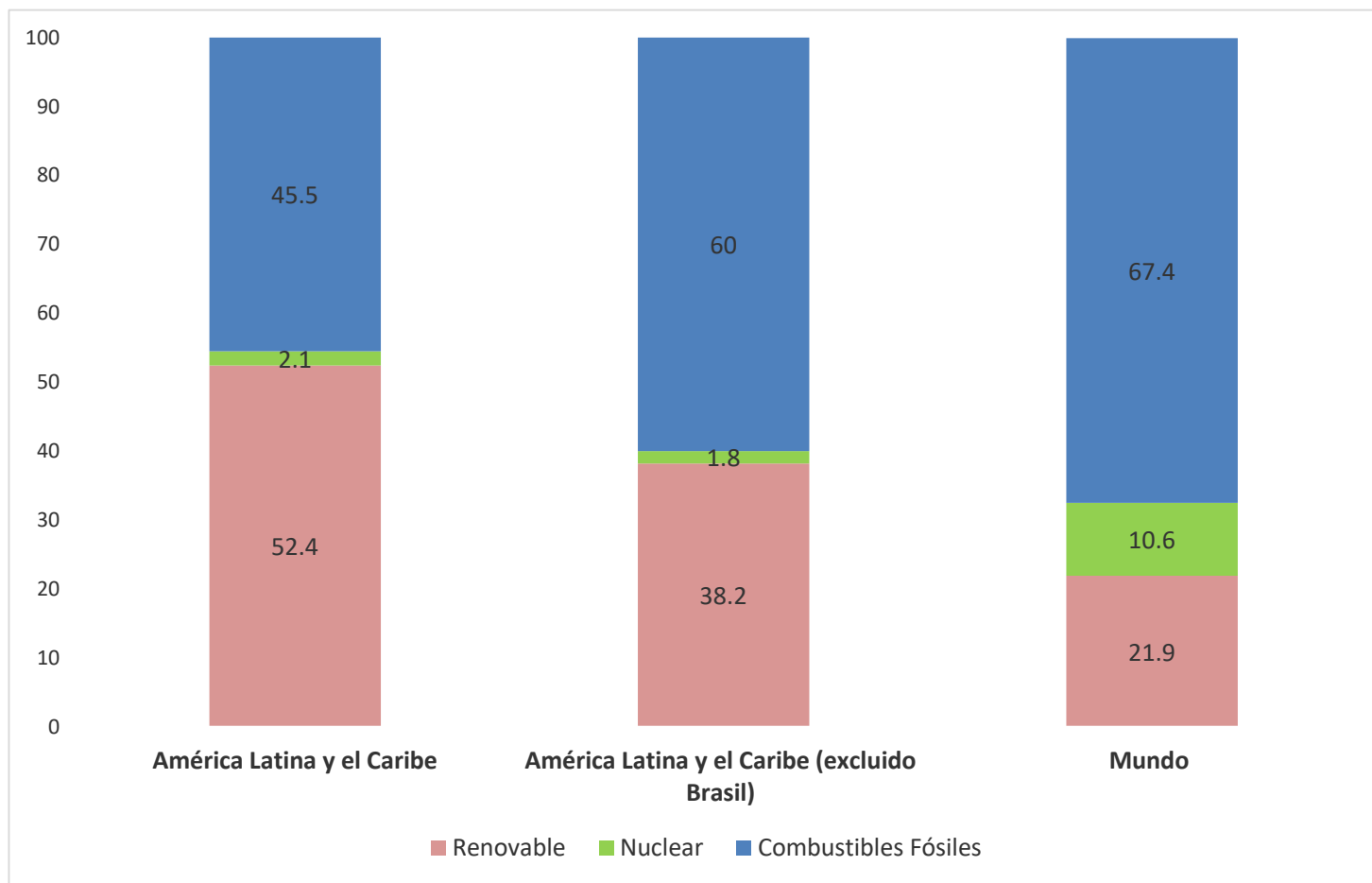


Primary energy supply in Latin America and the Caribbean 2015 (Percentage of total)

3.1 We need more innovation to increase deployment of RETs

Without Brazil, the regional electricity generation matrix is no longer largely renewable

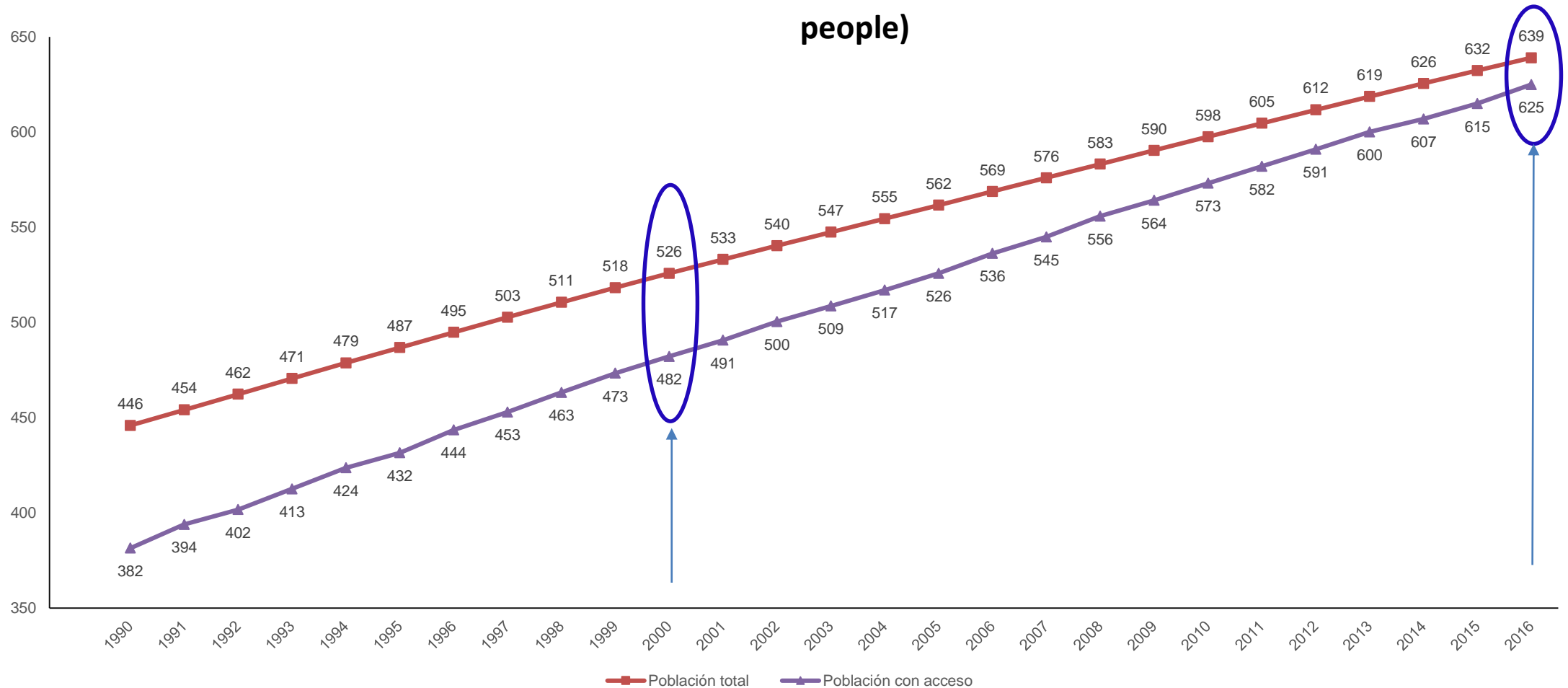
Electricity generation matrix in Latin America and the Caribbean (with and without Brazil) vs. the World (Percentage of the total)



3.2 What innovations are needed to have everyone connected to the grid?

The number of people without access to electricity services fell from 43.6 million in 2000 to 14 million in 2016.

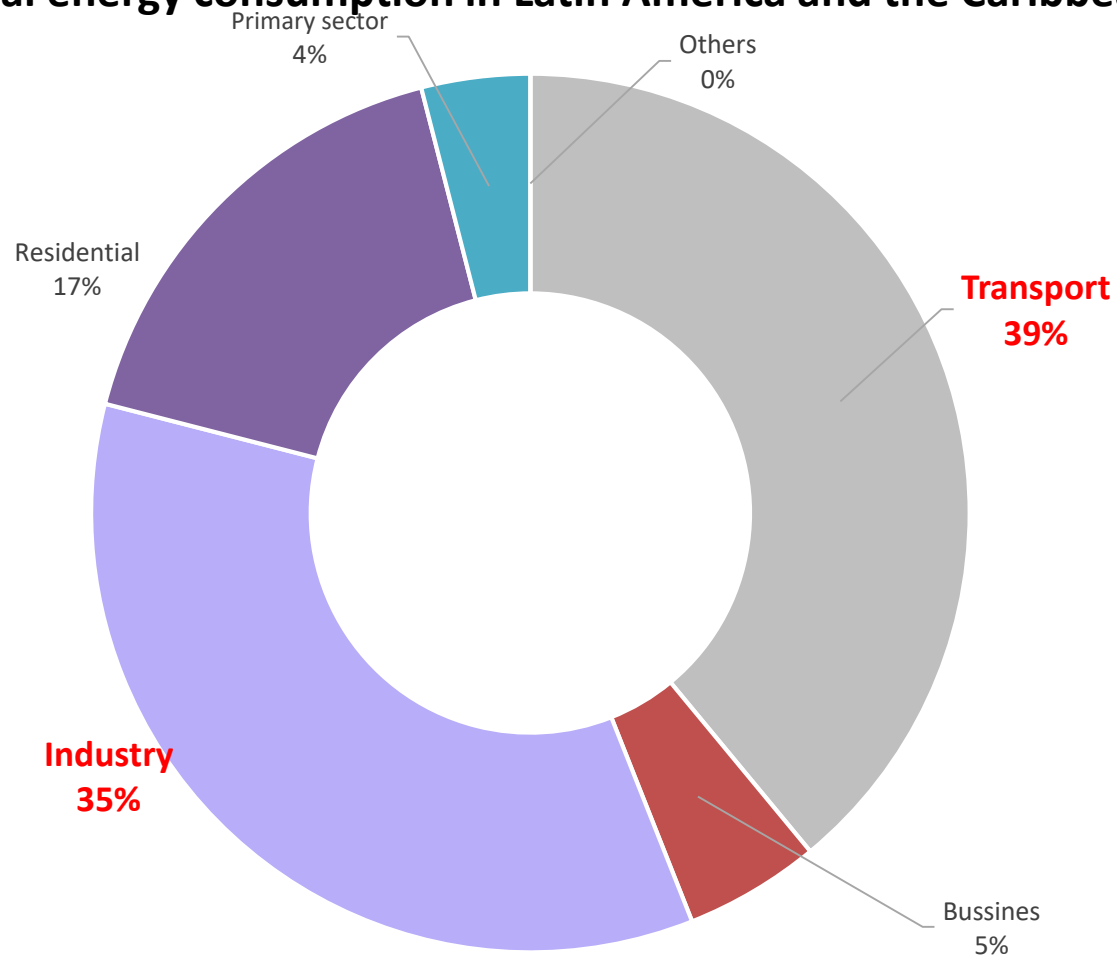
Access to electricity services in Latin America and the Caribbean (In hundreds of millions of people)



3.3 In which sectors do we need to innovate?

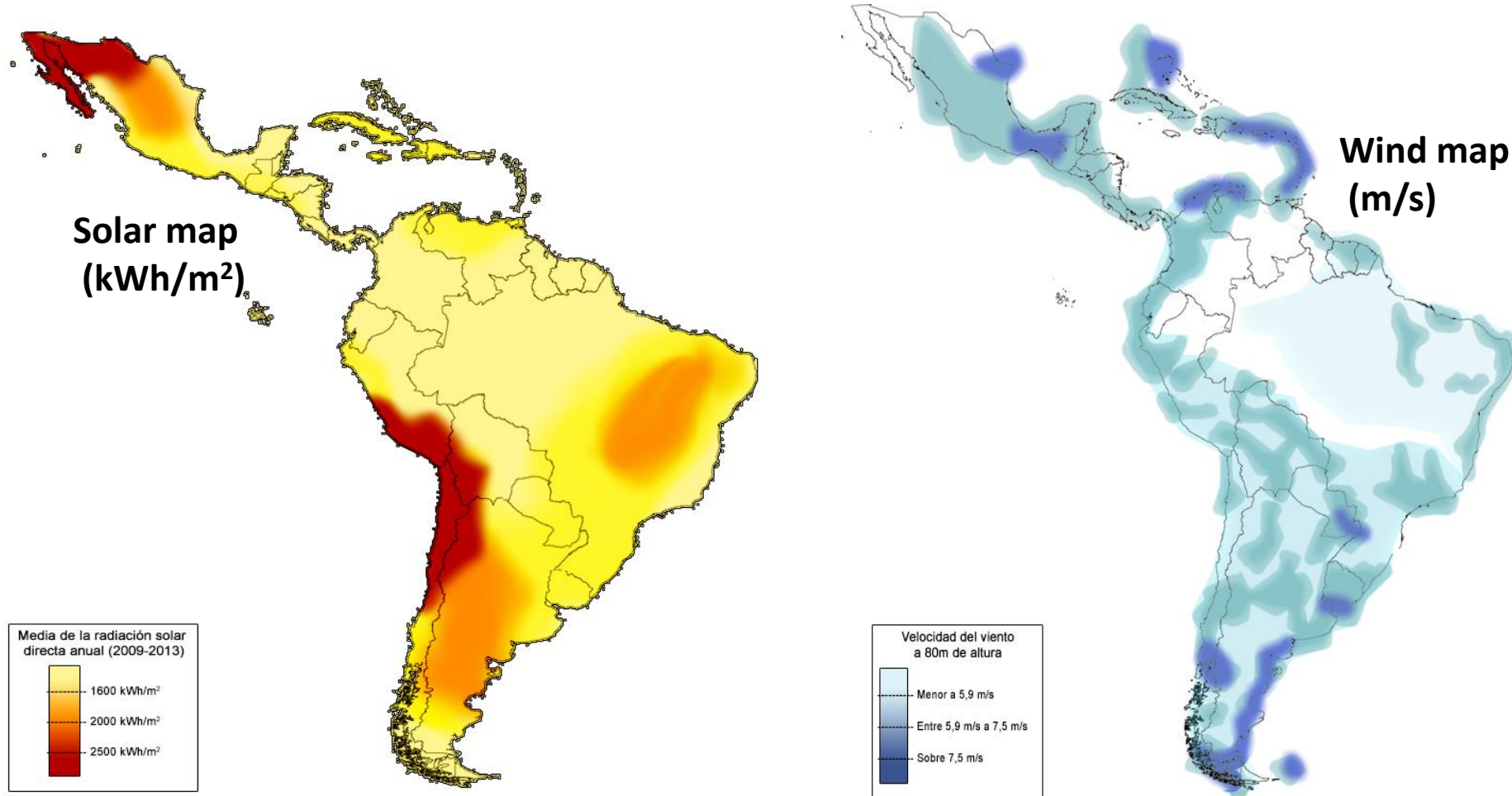
The transport sector is almost 100% dependent on fossil fuels and consumes 39% of the region's total energy.

Total final energy consumption in Latin America and the Caribbean (Percentage of the total)



3.4 The region has an abundant potential for solar and wind energy.

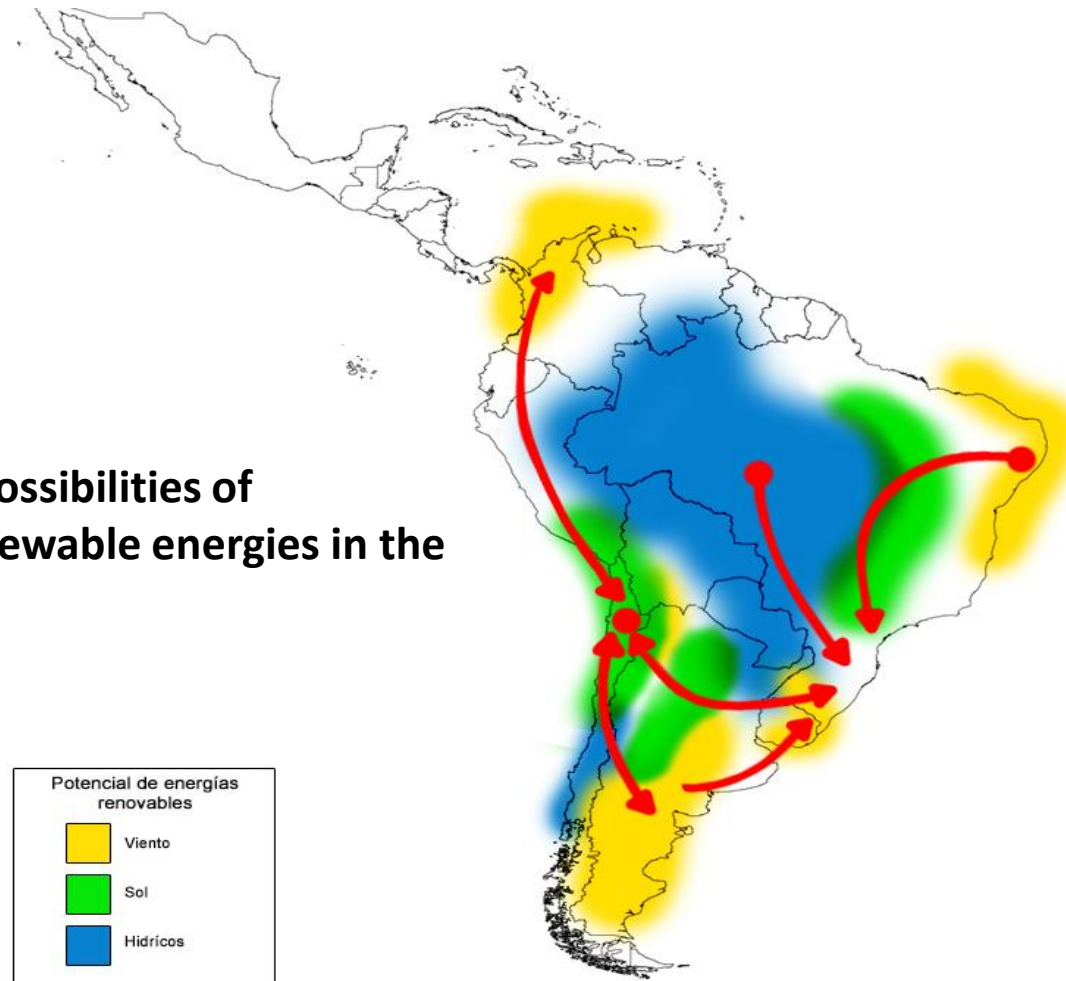
Solar and wind map of Latin America and the Caribbean



Source : Comisión Económica para América Latina y El Caribe (CEPAL) en base a los datos del SolarGis y el Journal of Geophysical Research

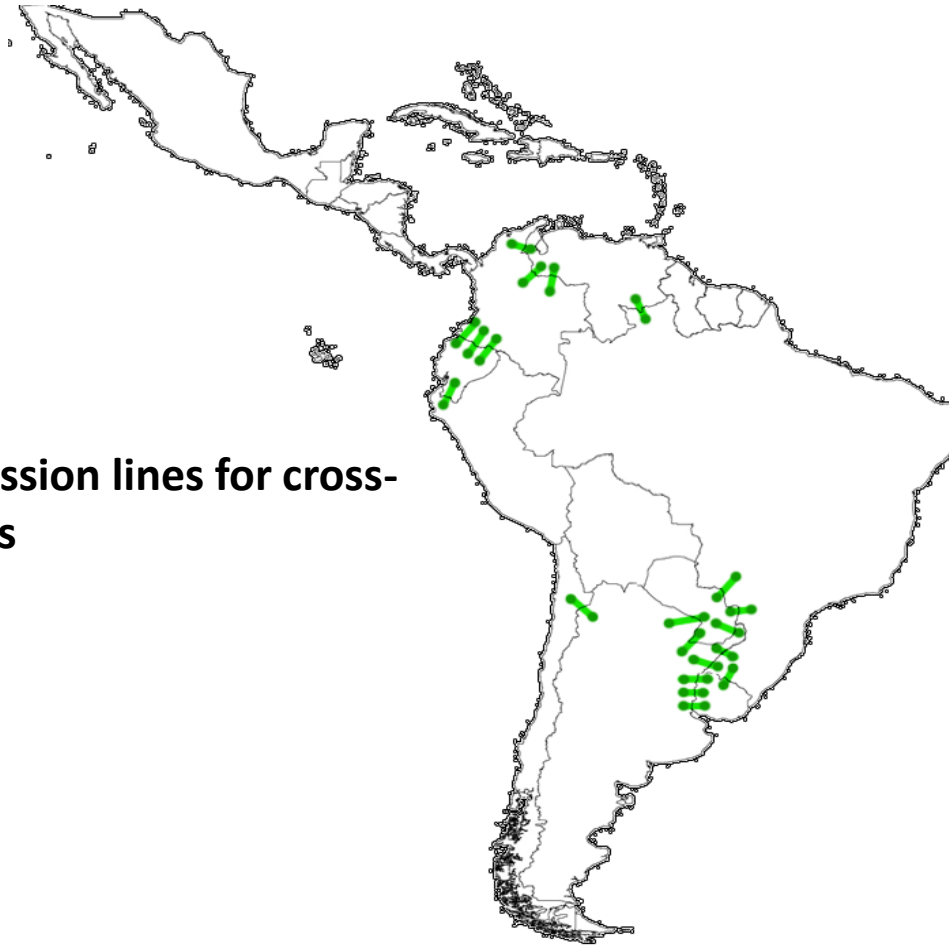
3.5 Regional energy complementarity can play a key role

Map representing the possibilities of complementarity of renewable energies in the region



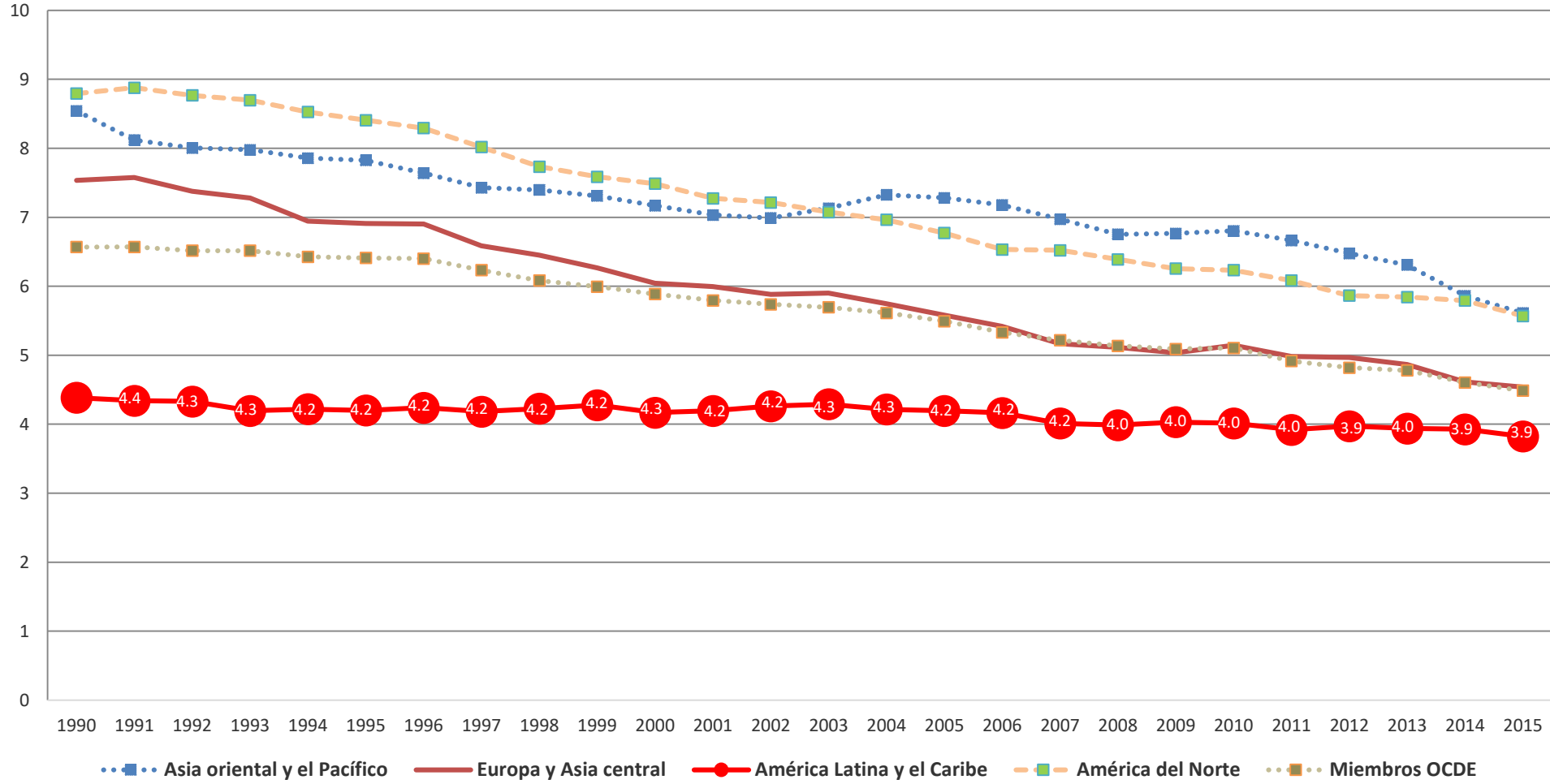
3.6 For greater complementarity, it is necessary to address the low coverage of interconnection networks and regulations → We need innovation

Map of current transmission lines for cross-border interconnections

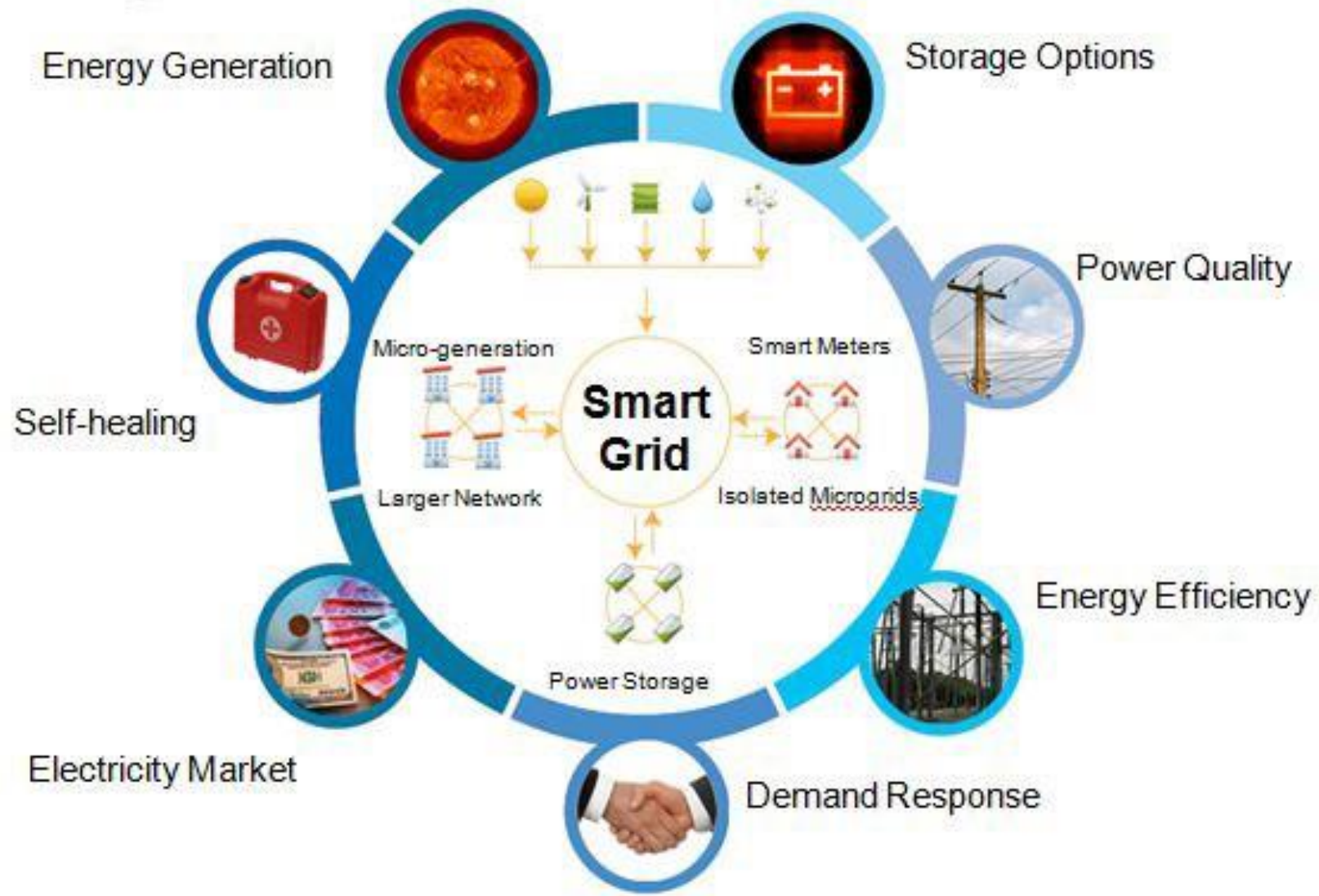


3.7 Historically, the region has had the lowest energy intensity worldwide, but it has also been the one that has improved the least.

Energy intensity based on primary energy in Latin America and the Caribbean versus other regions (In MegaJoule/GDP)



3.8 Technological change enables sustainable energy development: the Smart-Grid innovation example

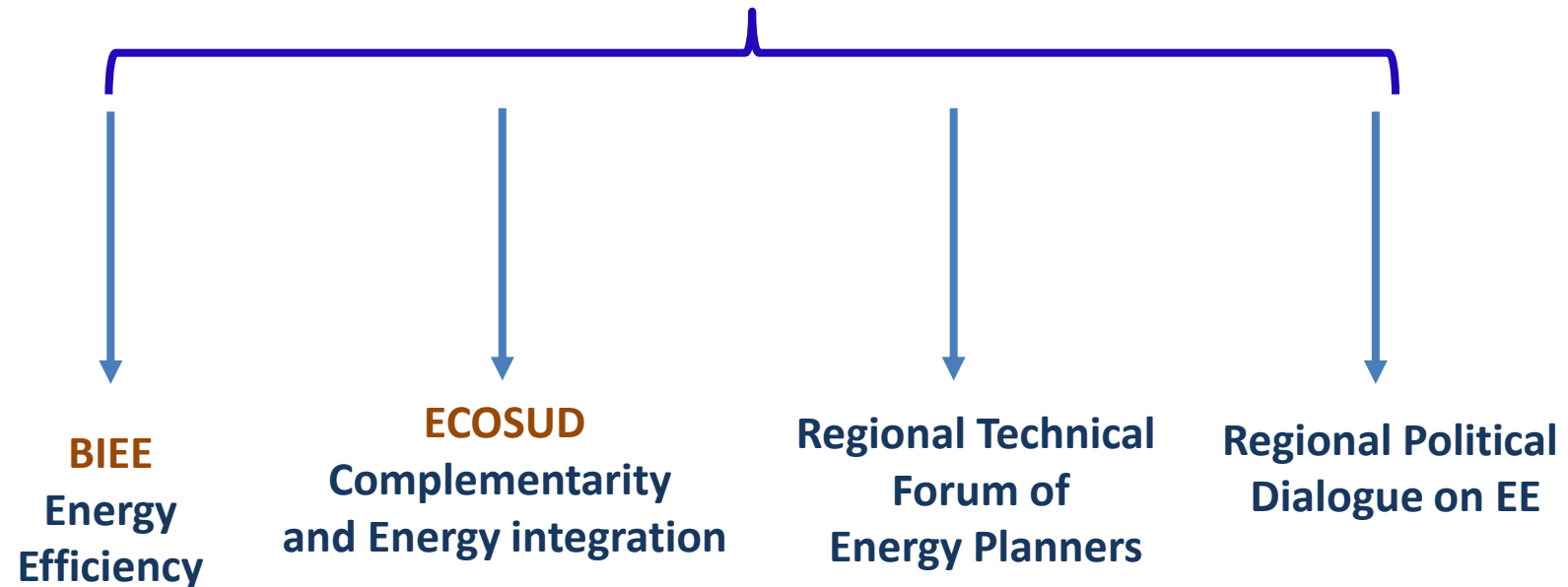


Source: <http://electronicsbeliever.com/smart-grid-technology/>

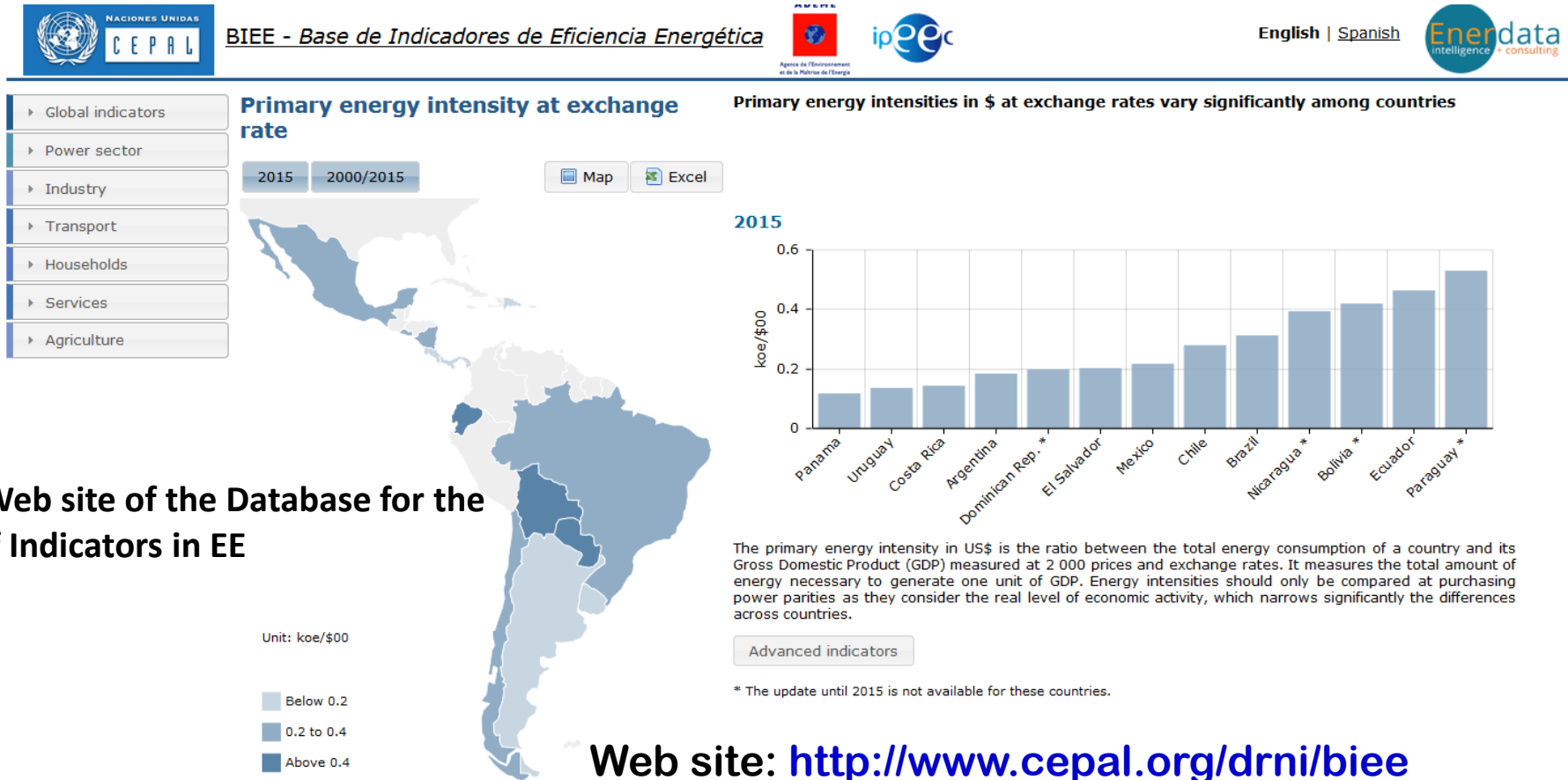
4 ECLAC Project: The Regional Observatory on Sustainable Energies (ROSE)



Regional Observatory on Sustainable Energies (ROSE)



4.1 The ROSE will use the knowledge and methodology used in the development of the BIEE programme → Reliable and Transparent Data



Data-Mapper: Web site of the Database for the development of Indicators in EE

Web site: <http://www.cepal.org/drni/biee>

Source BIEE
Database-‘Data-Mapper’: <http://www.biee-cepal.enerdata.eu/>

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4.2 Los "Regional Political Dialogues on Energy Efficiency" at the regional level have become the platform and space for political-technical dialogue on the subject.

➔ Data to develop policies based on evidence

***VIII Regional Political
Dialogue
Buenos Aires, Argentina
December 5, 2017***



4.3 REGIONAL TECHNICAL FORUM OF ENERGY PLANNERS → Sustainable Energy Planning

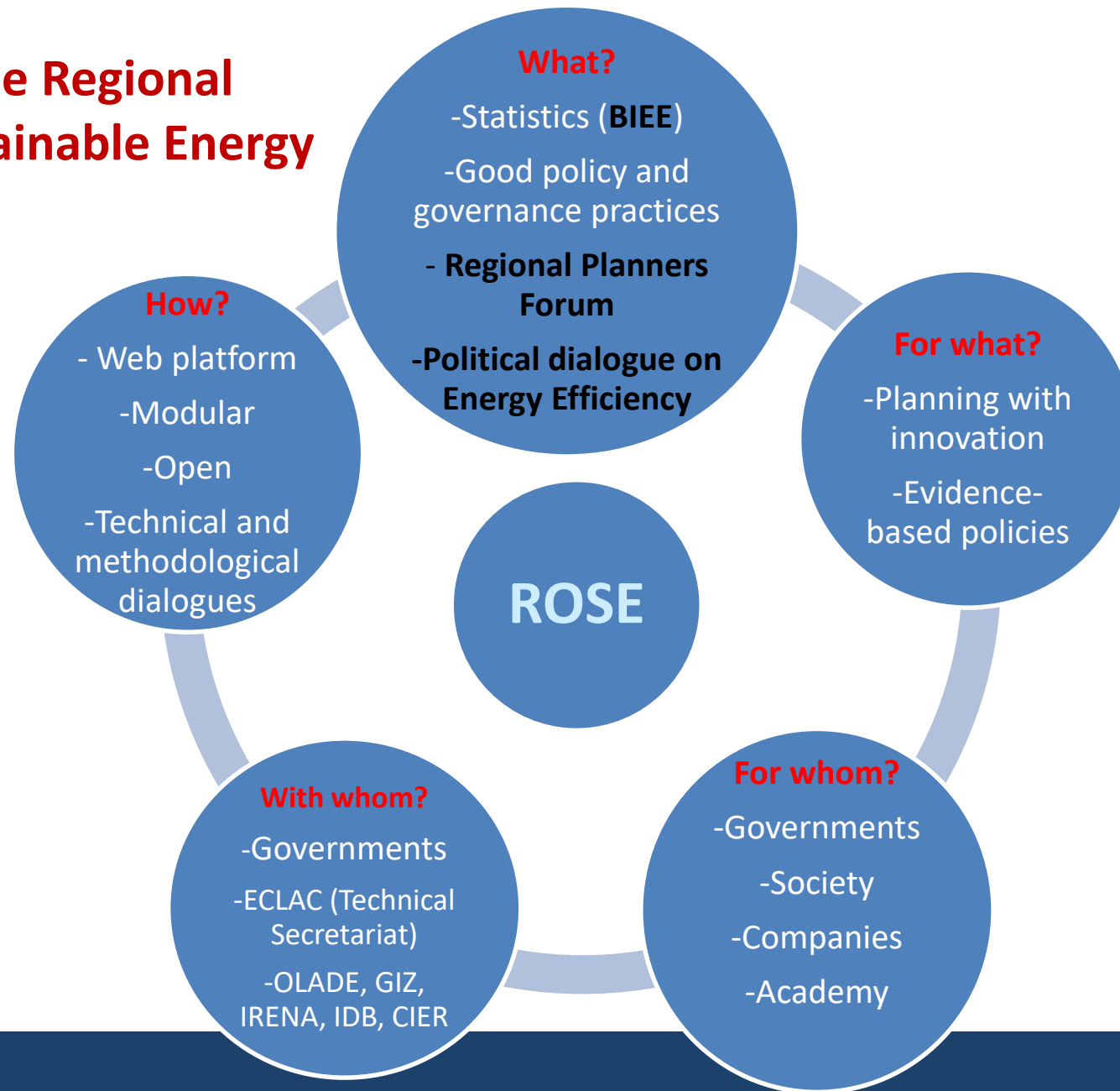
Forum Preparatory Meeting - Rio de Janeiro,
EPE - March 6, 2018



1st Technical Forum of Energy Planners - Bogotá, Ministry of
Energy and Mines of Colombia, 5-June-2018



4.4 Governance of the Regional Observatory on Sustainable Energy (ROSE)



Thanks for the attention!
Gracias por la atención!



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