ADBInstitute

How to Build Institutional Capacity for Green Energy

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1. Why Green Energy?

1.1 Why is Green Energy Important – Environmental Factors

The first answer must be the environment

- Gradual increases in weather extremity/natural disasters
- Emissions and pollution a key reason for the changing climate

1.1 Why is Green Energy Important – Environmental Factors

Rising sea levels are threatening the existence of some Pacific islands

- Kiribati, Marshall Islands and Tuvalu are just some of the countries struggling as a result of climate change

1.2 Why is Green Energy Important – Economic Factors

Looking at macro factors…

- Recent oversupply in the oil market has taken focus away from long term resource scarcity
- Fossil fuels will run out at some stage
- Cost of CO2 emissions created through oil and coal usage will increase dramatically

- Green industry will only get bigger and bigger

1.2 Why is Green Energy Important – Economic Factors

Long term economics of green industry is convincing

- Green energy has many positive externalities
- Renewable energy is becoming more economically viable
- Even with oil prices as low as $30 a barrel, solar energy is still very much economic

1.3 COP 21 and the Evolving Environmental Policy Space

Summit agreed to keep temperature increases from global warming below 2°C

- To achieve this objective, green industry will have to play a much bigger role in the market

2. Opportunities in Developing Asia and the Pacific

2.1 Two Tales of Energy in Bangladesh

Bangladesh provides a great example

- Large parts of the population lack access to electricity
- Projects to resolve this through coal power plants financed by MDBs have often been rejected due to environmental concerns

2.1 Two Tales of Energy in Bangladesh

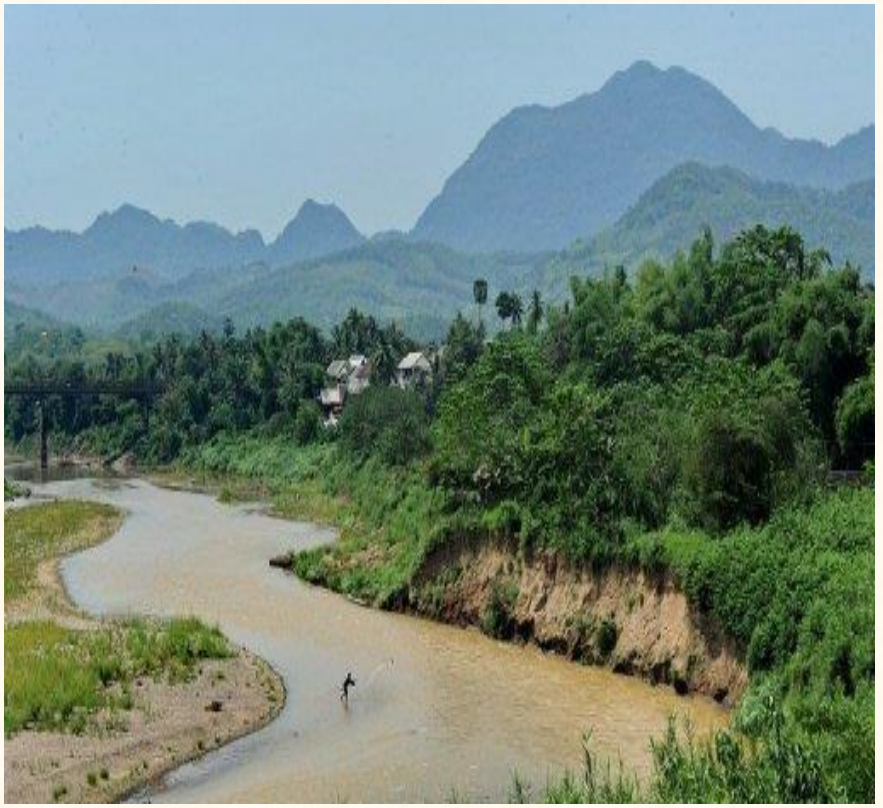
Solar the solution for a lack of infrastructure

- Solar power does not rely on a well developed electricity grid
- The government, with the help of IOs, has made a success of solar
- 16 million homes have gained access to power

2.2 Opportunities – Greater Mekong Subregion

There are significant opportunities across Asia

- Major ADB publication highlighting the potential in the Greater Mekong Subregion (GMS)
- The potential applies to wind, solar and biofuels



2.3 Opportunities – Central Asia

	Kazakhstan	Uzbekistan	Kyrgyzstan	Tajikistan	Turkmenistan
Share of RE in electricity generation, 2012	0.6%	3 %	1 %	2.5%	0,2%
Installed capacity, MW	<1	<1	0	<1	0
Technical potential, MW	3,760,000	593,000	267,000	195,000	655,000
Installed capacity, MW	2	< 1	0	0	0
Technical potential, MW	354,000	1,600	1,500	2,000	10,000
Installed capacity, MW	115	394	41.4	132	5
Technical potential, MW	4,800	1,800	1,800	23,000	1,300
Installed capacity, MW	0	1.5	0	0	0
Technical potential, MW	300	800	200	300	Not significant

Source: International Energy Agency, UNDP

2.4 Opportunities – Pacific

Electrification is yet to be achieved in parts of the Pacific

- Renewable energy generation is still minimal in many countries
- Only Fiji, PNG and Samoa have renewable energy shares above 30%

	Renewable energy generation (% of total)	Target
Cook Islands	<1%	100% by 2020
Fiji	67%	100% by 2030
Federal States of Micronesia	<1%	30% by 2020
Kiribati	<1%	-
Republic of Marshall Islands	6%	20% by 2020
Nauru	<5%	-
Palau	3%	20% by 2020
Papua New Guinea	46%	-
Samoa	32%	-
Solomon Islands	<1%	100% by 2030
Tonga	4%	50% by 2020
Tuvalu	2%	100% by 2020
Vanuatu	25%	65% by 2020

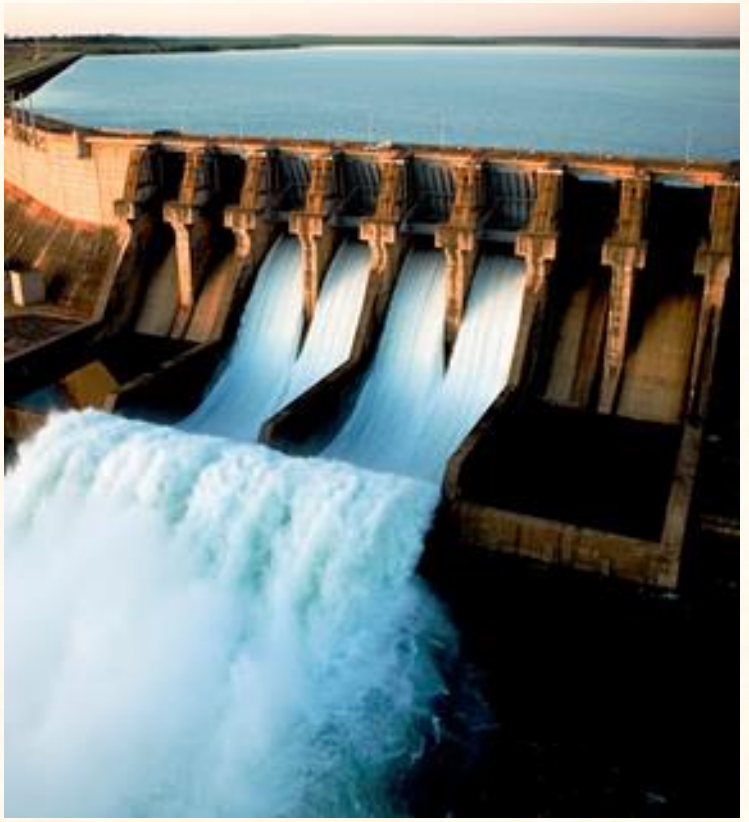
Source: IRENA

3. Analyzing the Korean Case

3.1 ① Overview

Existing institutions may be insufficient to support green industry, especially green energy

- There may be a legacy image that green energy projects are not economic, despite this no longer being true
- Governments should make a paradigm change by building institutional capacity



3.1 ② Overview

Government policies for energy typically focus on incentive mechanisms (e.g. taxes and subsidies)

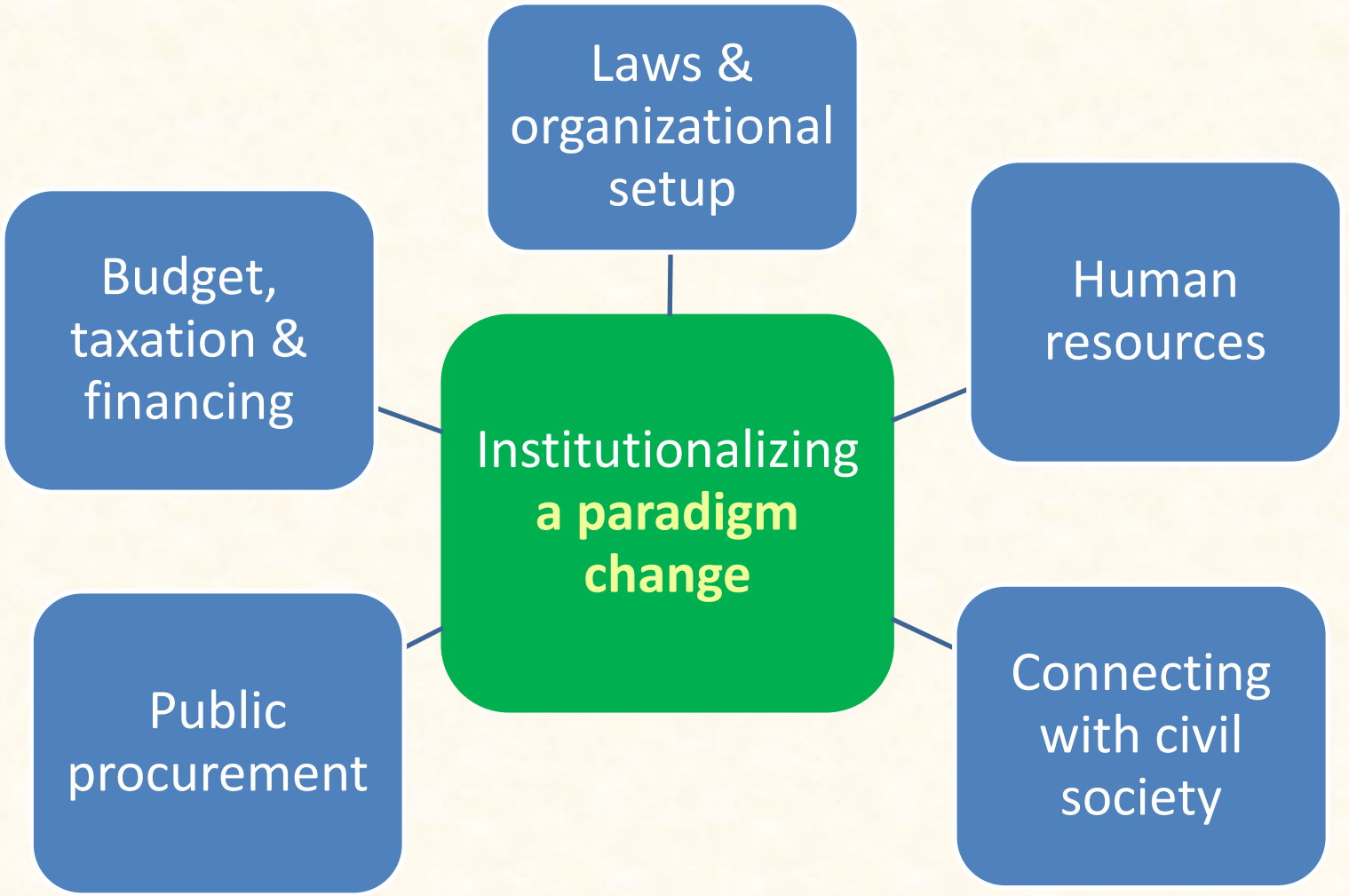
- Creating institutional capacity for green energy not only means implementing incentive mechanisms, but also laws, organizational change and internal processes

3.2 ① Analyzing the Korean case

Analyzing how a paradigm change in Korea enhanced institutional capacity

- Korea introduced policy incentives and embedded economic structure to motivate the green energy industry

3.2 ② Institutionalizing a Paradigm Change



3.3 ① Laws and Organizational Setup

Laws and organizations facilitate green industry development

- The Korean government created laws and institutions in the past to support industrialization
- Governments must now do the same for green industry

FRAMEWORK ACT ON LOW CARBON, GREEN GROWTH

Article 1 (Purpose)

…..promote the development of the national economy by laying down the foundation necessary for low carbon, green growth and by utilizing green technology and green industries as new engines for growth……

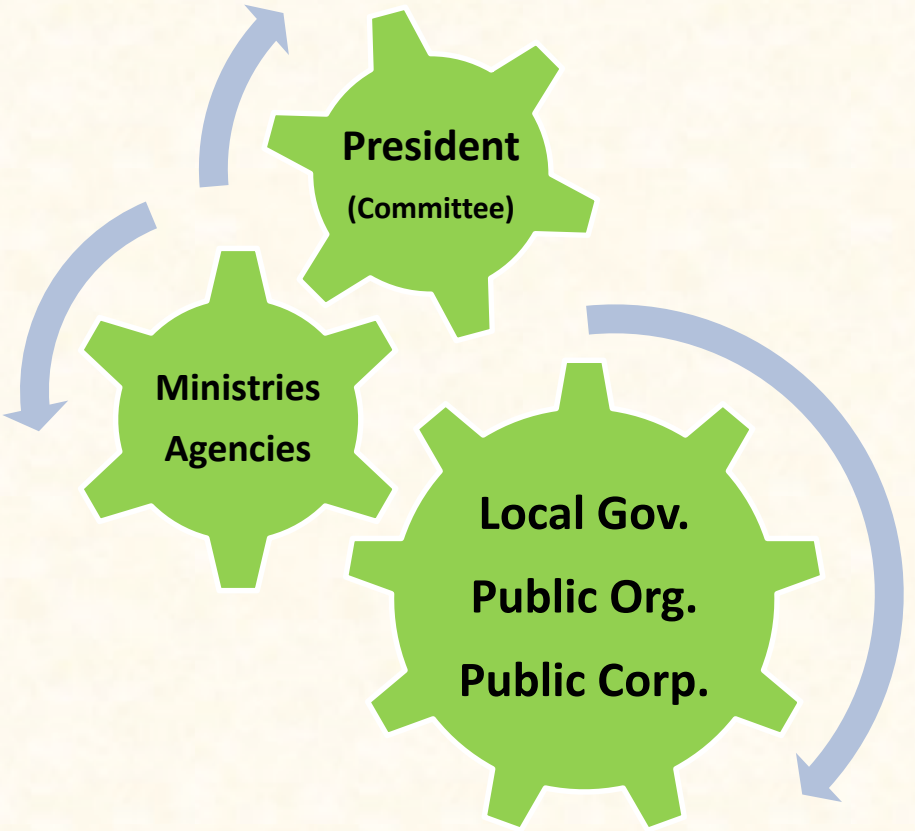
Article 10 (Establishment and Implementation of Action Plans by Central Administrative Agencies)

(1) The head of each central administrative agency shall establish and implement an action plan for matters under his/her jurisdiction (hereinafter referred to as "central action plan"), as prescribed by Presidential Decree, so as to execute the national strategy for green growth efficiently and systematically……..

3.3 ② Laws and Organizational Setup

Organizational setup also has a real impact on policies

- A national presidential committee on green growth was established
- Relevant ministries were instructed to launch green division
- The policy flowed through to metropolitan and provincial governments



3.4 Budget, Financing and Taxation

Green budget, green financing and green taxation

- Budget rules impose that at least 2% of total government spending is on green industry
- Public financial bodies also built special financing program for green industry
- Green businesses also benefit from special tax credits

3.5 Human Resources

Human capital is another driver of green industry

- While governments cannot directly innovate businesses, they can help through innovative education and research
- The Korean government supports universities and programs specialized in green industry

Conclusion

- These are all the ways the Korean government was successful in enhancing institutional capacity
- Countries can trigger a boom in green industry through the design of a new system, just as Korea did