

Theme 6: Sustainable Energy Policy

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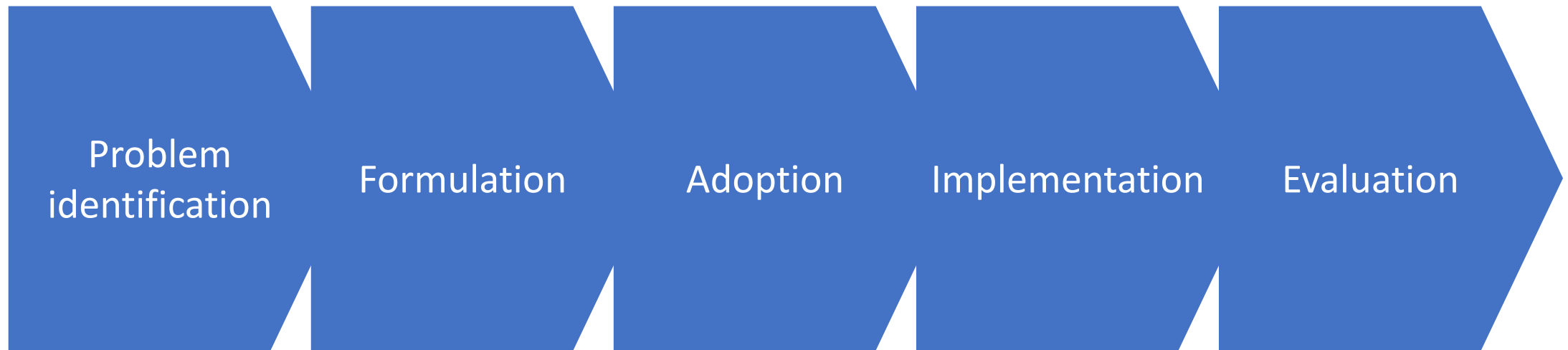
Dr. Naing Naing Oo

- Policy instruments
 - Sustainable energy policies in developed and developing countries
 - Policy and Institutional structure of energy sectors in Myanmar
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Policy

- *Policy* – a course or principle of action adopted or proposed by a government and party.
 - *Policy making* – processes by which governments translate their political vision into programs and actions to deliver outcomes or desired changes in the real world.
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Policy Making Process



Policy Making Process (cont'd)

- Problem identification
 - placing a public problem on the government policy agenda
 - Formulation
 - development of a policy alternatives for dealing with a policy problem on the government agenda
 - Adoption
 - Adoption of a policy alternative through political actions
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Policy Making Process (cont'd)

- Implementation

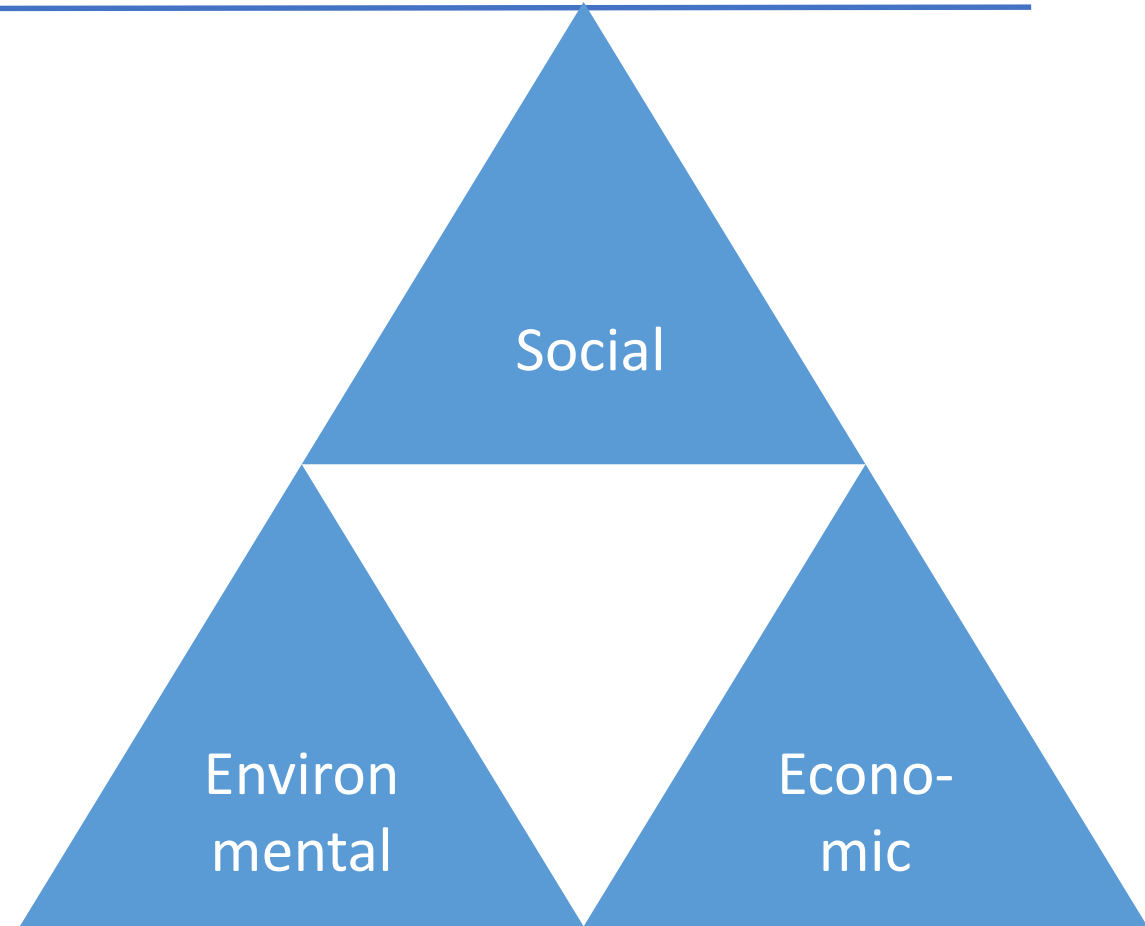
- activities designed to carry out an adopted policy by administrative units

- Evaluation

- Variety of ways carried out by different actors to assess output, outcomes, and impacts of a policy and examine whether and to what extent a policy has achieved its objectives and goals
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Sustainable Energy Policy Dimensions

- Social
 - _ Basic human need
 - _ Health and education etc.
 - _ Accessibility and affordability
- Economic
 - _ Production
 - _ Growth
 - _ Rural development
- Environment
 - _ GHG emission, water, land use



Renewable Energy Policy Mechanisms

- Market-pull
 - _ to increase renewable energy use by creating demand for renewable energy technologies
 - Technology-push
 - _ to increase the incentive to generate new knowledge and develop new renewable energy technologies
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Renewable Policy Mechanisms (Market-pull)

- Price based
 - Quota Obligations (Quantity based)
 - Fiscal and financial incentives
 - Environmental standards
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Price Based Incentives

Established favorable price regimes for RE.

- Feed-in Tariff policies
 - Premiums for use of domestic services
 - Reduced technology and development cost
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Fed-In Tariff policy (FITP)

- Guaranteed access to the grid
 - Stable long-term purchase agreement
 - Payment levels, usually market price
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Quota Based incentives

- Targets on Renewable Energy penetration
- Renewable Portfolio Standards (RPS)
- Renewable Energy Credits (RES)
- Auctions

Government sets the target, market determines the price

Renewable Portfolio Standards (RPS)

- A requirement upon covered retail electric suppliers to supply a designated portion of their retail load with eligible sources of renewable energy.
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FITP and RPS

- FITP – price is set, quantity is decided by market.
 - RPS – quantity is set, price is decided by market
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FITP and RPS

FITP

- Directly addresses price risks
- Attracts investors
- Lower uncertainties in initial stage

RPS

- Less expensive
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FITP and RPS

FITP

- Directly addresses price risks
- Unsuccessful when-
 - Regional financial crisis
 - Poor grids
 - Unpredictable regulatory change

RPS

- Implemented effectively where
 - Market is mature
 - Institutions are experienced
 - Players are financially strong



Fiscal and Financial Incentives

- Tax credits and Fiscal exemptions
 - Capital subsidies
 - Loans and loan guarantees
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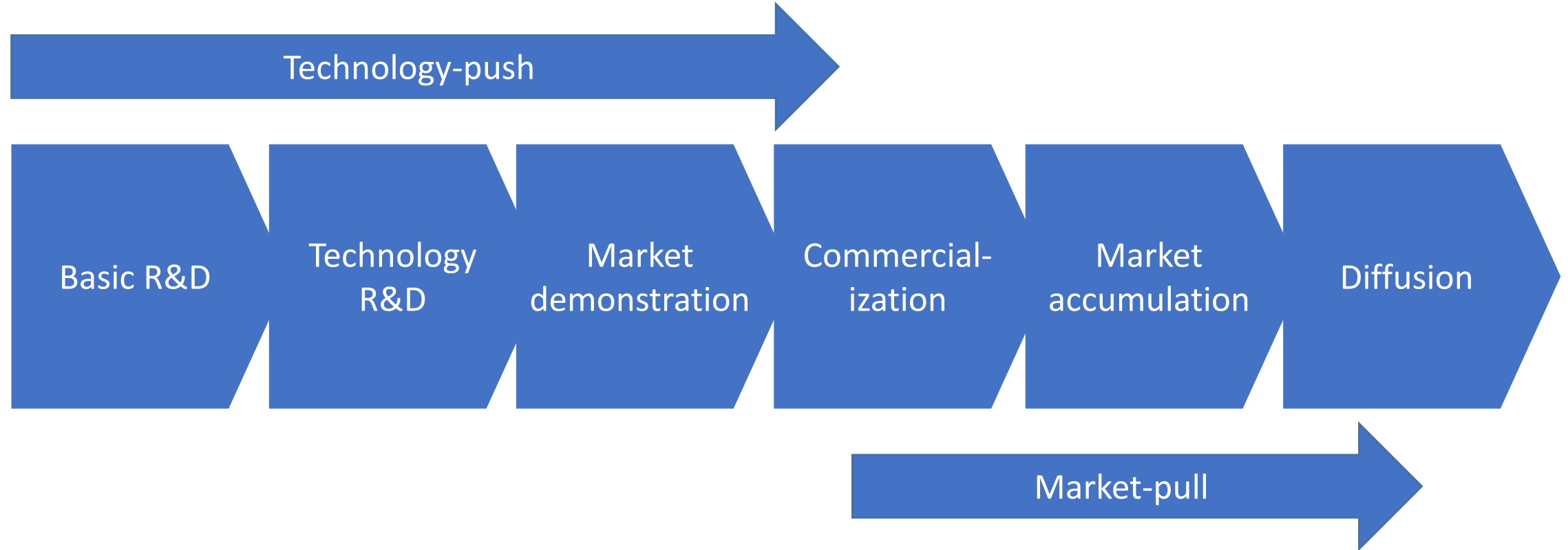
Environmental Standards

- Carbon tax
 - Performance standards
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Technology-push policies

- Public R&D spending
 - Capacity enhancement for knowledge exchange
 - Support for education and training
 - Technology exhibitions
 - Network creations
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Mix of Market-pull and Technology-push



Energy Policy and Planning

- No universal policy
 - The most suitable policy in one country may not be appropriate for another country
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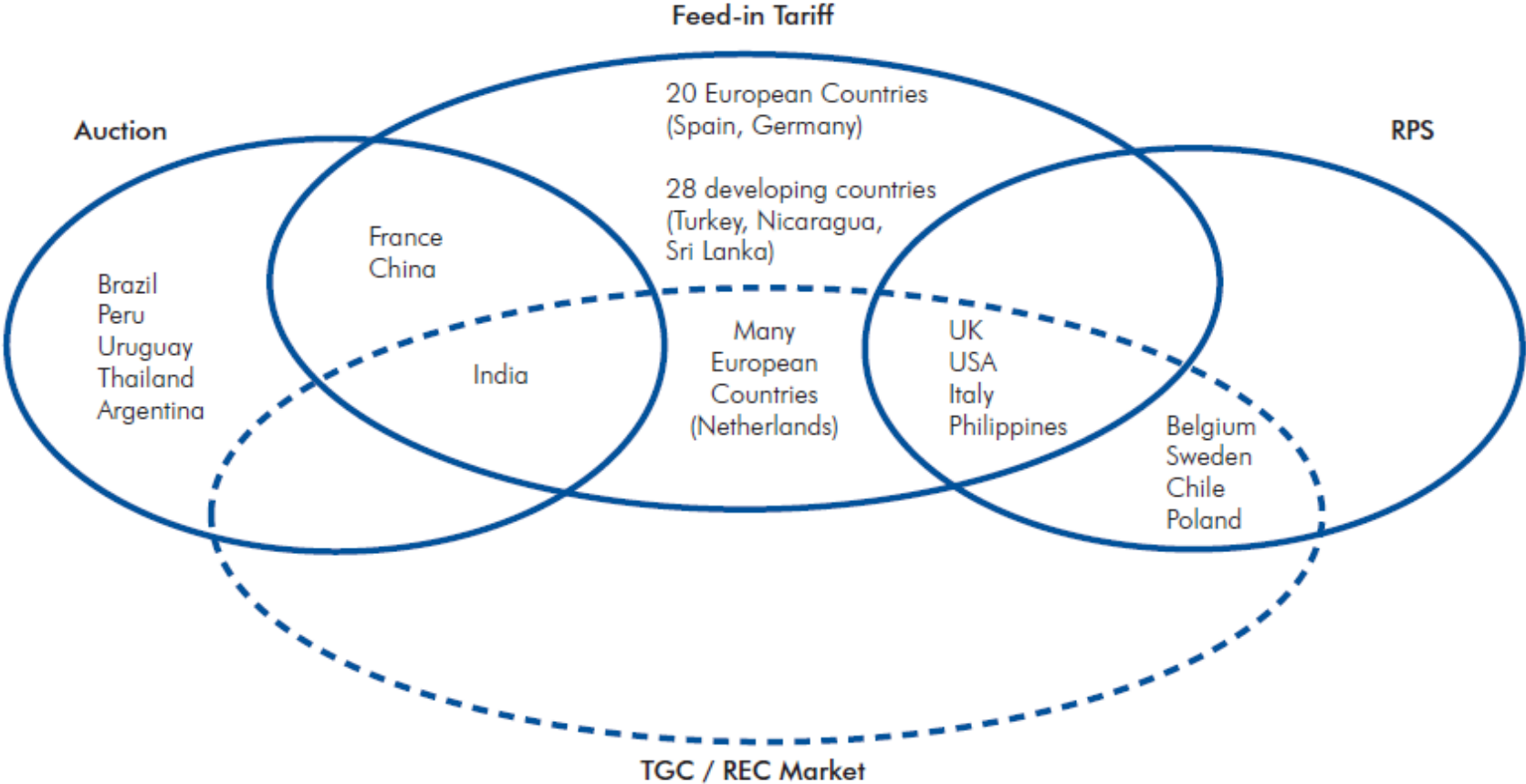
Policy Performance

- Macroeconomic conditions
 - Institutional structure and capacity
 - Governance and political stability
 - Energy market dynamics
 - Infrastructure capacity (e.g. grid)
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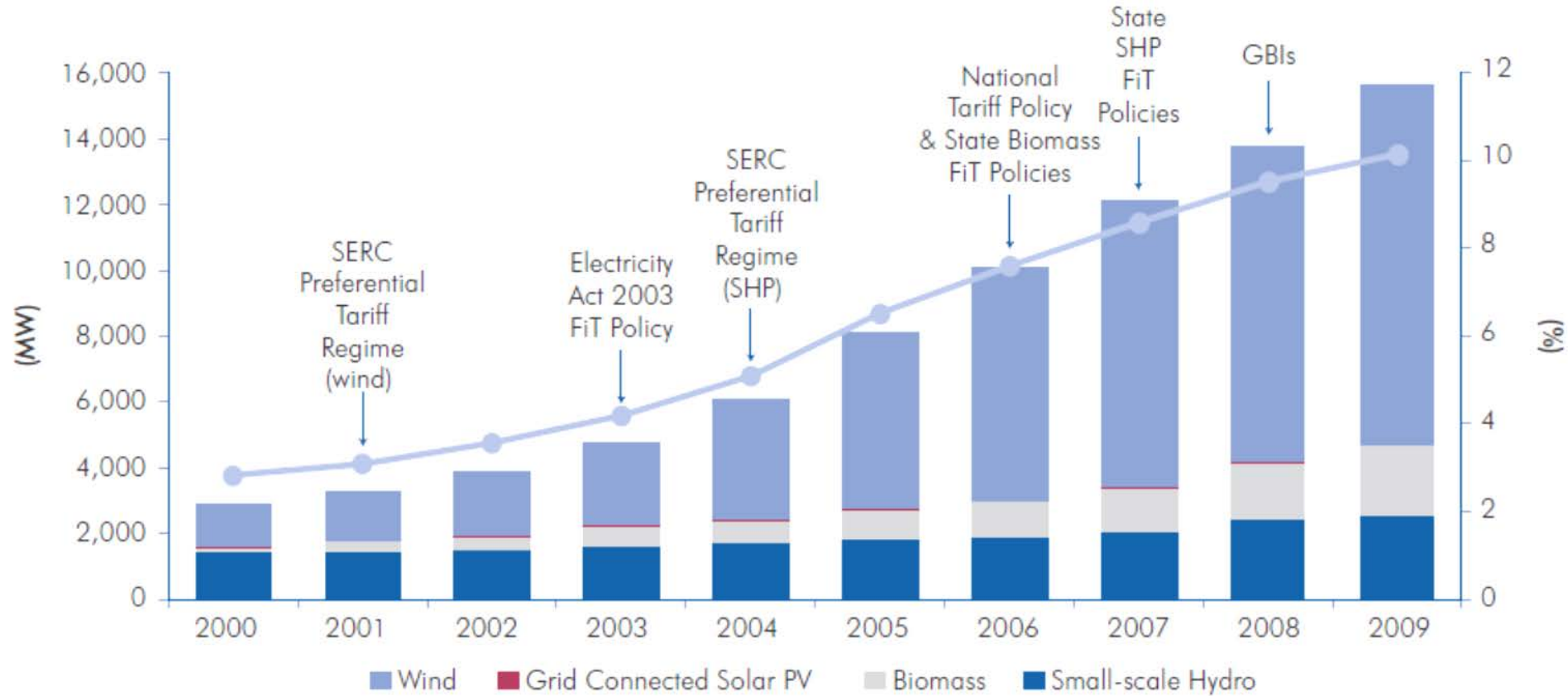
Use of Policies

- United States
 - FIT in 1970s
 - Renewable Portfolio Standard (RPS) in 1983
 - Germany
 - FIT in 1990
 - United Kingdom
 - RPS in 1990s
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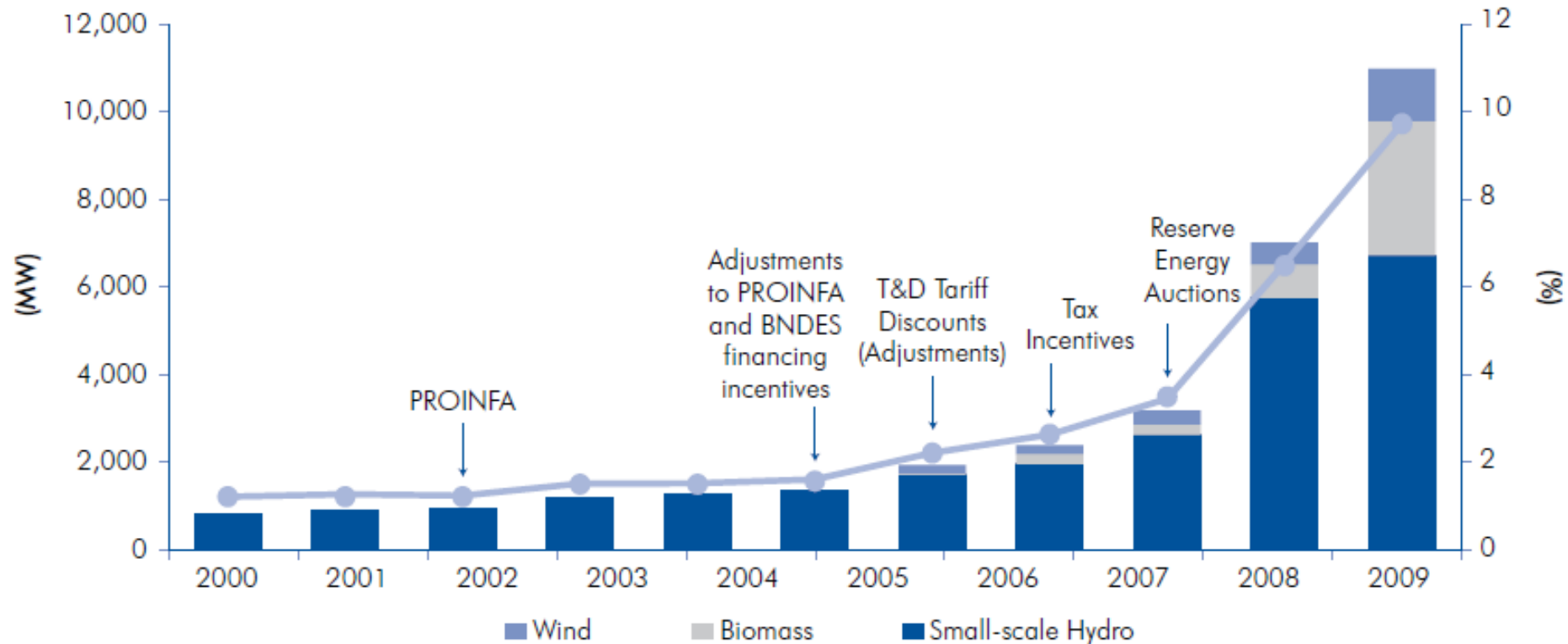
Use of Policies



RE Capacity and Share in Power System, India



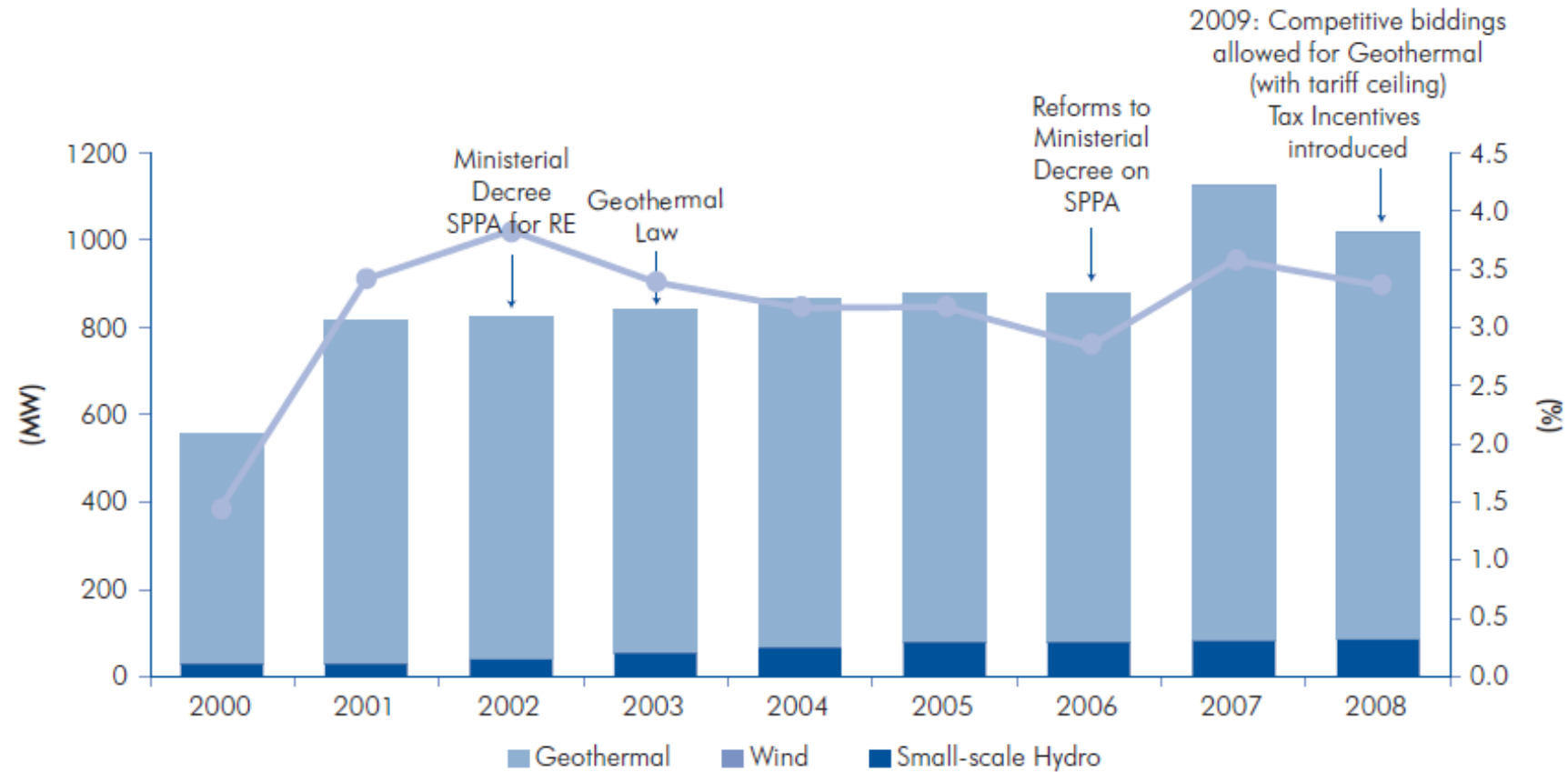
RE Capacity and Share in Power System, Brazil



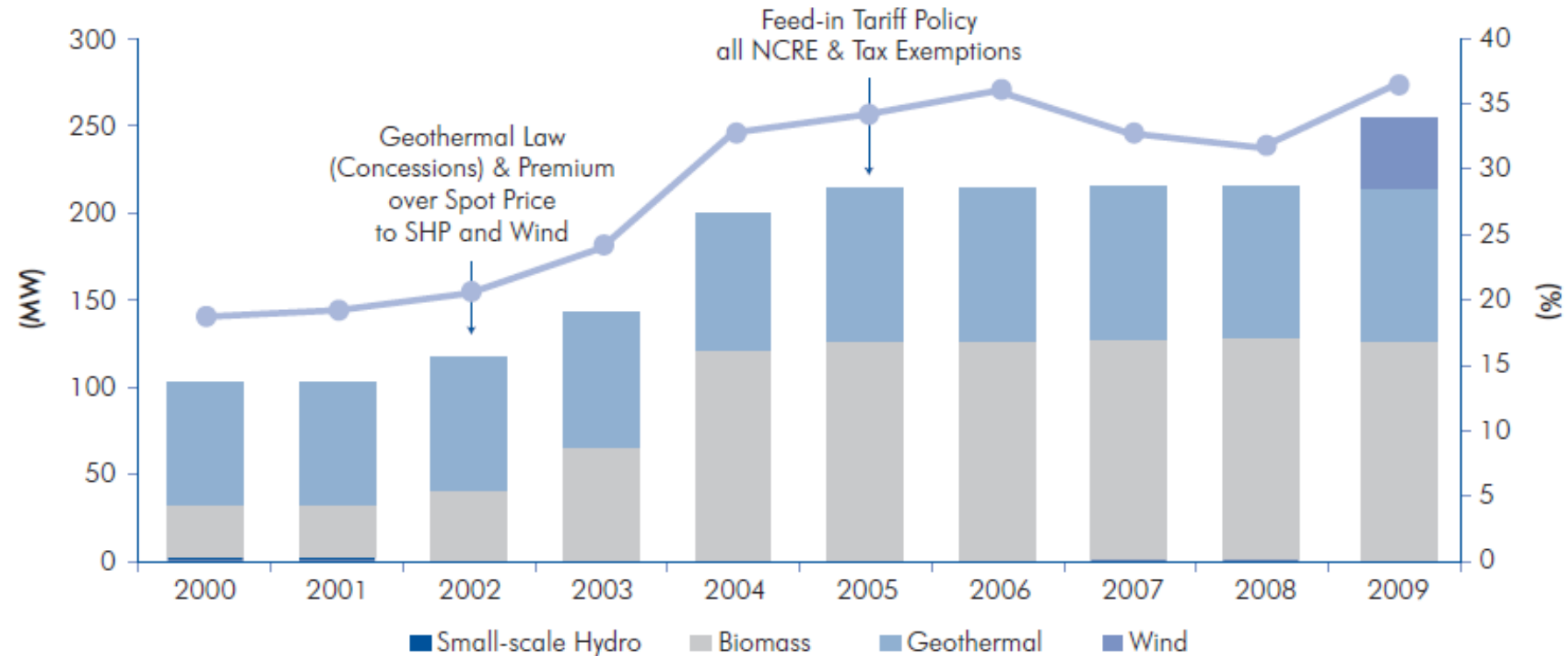
India and Brazil

- Strong government commitment
 - Institutions exclusively focused on RE development
 - Growing domestic equipment manufacturing
 - Effort toward attracting private participation
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RE Capacity and Share in Power System, Indonesia



RE Capacity and Share in Power System, Nicaragua



Indonesia and Nicaragua

- Regulatory uncertainty in power sector
 - Lowering avoided cost of power generation
 - Lack of clarity (how to cover incremental costs)
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Myanmar Energy Policy Framework

Prior to 2015

- maintaining energy independence
 - promoting the wider use of new and renewable sources of energy
 - promoting energy efficiency and conservation
 - promoting household use of alternative fuels
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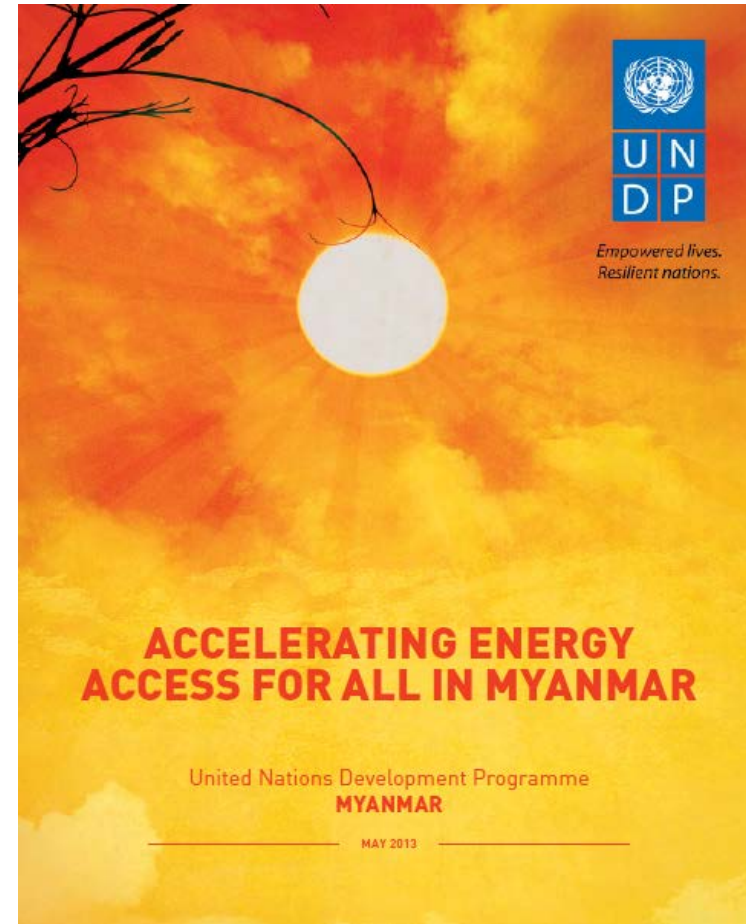
Assessments

ADB



Asian Development Bank

ADB (2012)



UNDP (2013)

National Energy Management Committee

For ensuring the development of energy and electrical sectors, National Energy Management Committee and Energy Development Committee are formed on 9 January, 2013 by the president office notification No (12/2013).

Members

- Patron – Vice President
 - Chairman – The Union Minister, Ministry of Energy (MOE)
 - Deputy Chairman – The Union Ministry, Ministry of Electric Power (MOEP)
 - Secretary – Deputy Minister (MOE)
 - Joint Secretary – Deputy Minister (MOEP)
 - 6 Union Ministers, 1 High Government Official 2 civilians, President of MES and General Secretary of REAM
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National Energy Management Committee formulated the National Energy Policy based on the “ [Myanmar Energy Sector Policy Draft Working Paper](#)” , prepared by international and national energy sector experts under the Asian Development Bank’s Technical Assistance Program to support the formulation of policy, rules and regulations that meet international standard, and “[Current Situation Analysis , policy, strategy and road map of each energy sub-sector](#)” prepared by energy related ministries.

National Energy Policy (9 points)

1. To implement short term and long term comprehensive energy development plan based on systematically investigated data on the potential energy resources which are feasible and can be practically exploited , considering minimum impact on natural environment and social environment
 2. To institute laws, rule and regulations in order to promote private sector participation and to privatize State Energy Organizations in line with State Economic Reform Policy
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3. To compile systematic statistics on domestic demand and supply of various different kinds of energy resources of Myanmar
 4. To implement programs by which local population could proportionally enjoy the benefit of energy reserve discovered in the areas
 5. To implement programs on a wider scale, utilizing renewable energy resources such as wind , solar , hydro, geothermal and bioenergy for the sustainable energy development in Myanmar
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6. To promote Energy Efficiency and Energy Conservation

7. To establish R, D, D&D (Research , Development, Design and Dissemination) Institution in order to keep abreast with international practices in energy resources exploration and development works and to produce international quality products in order to manufacture quality products and in order to conduct energy resources exploration works in accordance with international standard

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8. To promote international collaboration in energy matters
 9. To formulate appropriate policy for energy product pricing meeting economic security of energy producers and energy consumers
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Institutional Structure

- Ministries
 - Ministry of Energy
 - Ministry of Electric Power
 - Ministry of Industry
 - Ministry of Mines
 - Ministry of Science & Technology
 - Ministry of Environmental Conservation and Forestry
 - Working Groups
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Ministries

• Ministry of Energy	Policy, Oil, Gas
• Ministry of Electric Power	Electricity
• Ministry of Industry	Energy efficiency
• Ministry of Mines	Coal
• Ministry of Science & Technology	Research & Development
• Ministry of Environmental Conservation and Forestry	Biomass energy

Ministry of Energy

- Energy Planning Dept.
 - Coordination, Management and Regulation
 - Myanmar Oil and Gas Enterprise (MOGE)
 - Exploration, Drilling
 - Myanmar Petrochemical Enterprise
 - Refineries and Process
 - Myanmar Petroleum Products Enterprise
 - Marketing and Distribution
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Ministry of Electric Power

- Dept. of Hydropower Planning (DHPP)
 - Plans Hydropower expansion and JV agreements
 - Hydropower Generation Enterprise (HPGE)
 - Operates hydropower plants
 - Dept. of Electric Power (DEP)
 - Gas turbines
 - Yangon Electricity Supply Board (YESB)
 - Distribution services in Yangon
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Ministry of Electric Power (Cont'd)

- Electricity Supply Enterprise (ESE)
 - Electricity distribution outside Yangon
- Myanmar Electric Power Enterprise (HEPE)
 - Operates transmission networks
- Dept. of Hydropower Implementation (DHPI)
 - Builds hydropower projects

Current unit price → 35 kyats/kWh for household
 200 kyats/kWh for industrial and business

Working Groups

- Rural Energy Development Committee
 - Promoting rural energy access
 - Myanmar Engineering Society (MES)
 - Technical assistance
 - Renewable Energy Association of Myanmar (REAM)
 - Promoting RE applications for rural areas
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Goals

- Reduce energy consumption by 5% in 2020 and 10% in 2030
 - Improve 10% energy efficiency in industrial sector and 8% in residential sector by 2020
 - Substitute 8% biofuel in transport sector by 2020
 - Increase installed capacity of renewable energy to 15% by 2020
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Policies, Plans and Laws related to Energy Sector

- Petroleum Act (1934, amended 1937, 1946)
 - Electricity Act (1948, amended 1967)
 - Myanmar Electricity Law (1984)
 - Forest Law (1992)
 - National Environmental Policy (1994)
 - Conservation of Water Resources and Rivers Law (2006)
 - National Sustainable Strategies (2009)
 - Environmental Conservation Law (2012)
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Climate Change

- United Nations Framework Convention on Climate Change (UNFCCC), Myanmar ratified in 1994
 - National Adaptation Plan for Action (NAPA) report 2012
 - Clean Development Mechanism (CDM)
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Environmental and Social Safeguards

- National Environmental Conservation Committee (formed in 2011)
 - Chair by MOECAAF
 - 19 ministries
- Environmental Conservation Department (formed in 2012)
 - Environmental conservation activities



References

- UNEP Handbook for Drafting Laws of Energy Efficiency and Renewable Energy Resources. UNEP, 2007.
 - Design and Performance of Policy Instruments to Promote the Development of Renewable Energy: Emerging Experience in Selected Developing Countries. The World Bank, 2011.
 - Myanmar Energy Sector Initial Assessment. ADB, 2012.
 - Accelerating Energy Access for All Myanmar. UNDP, 2013.
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