STI and Renewable Energy in Thailand

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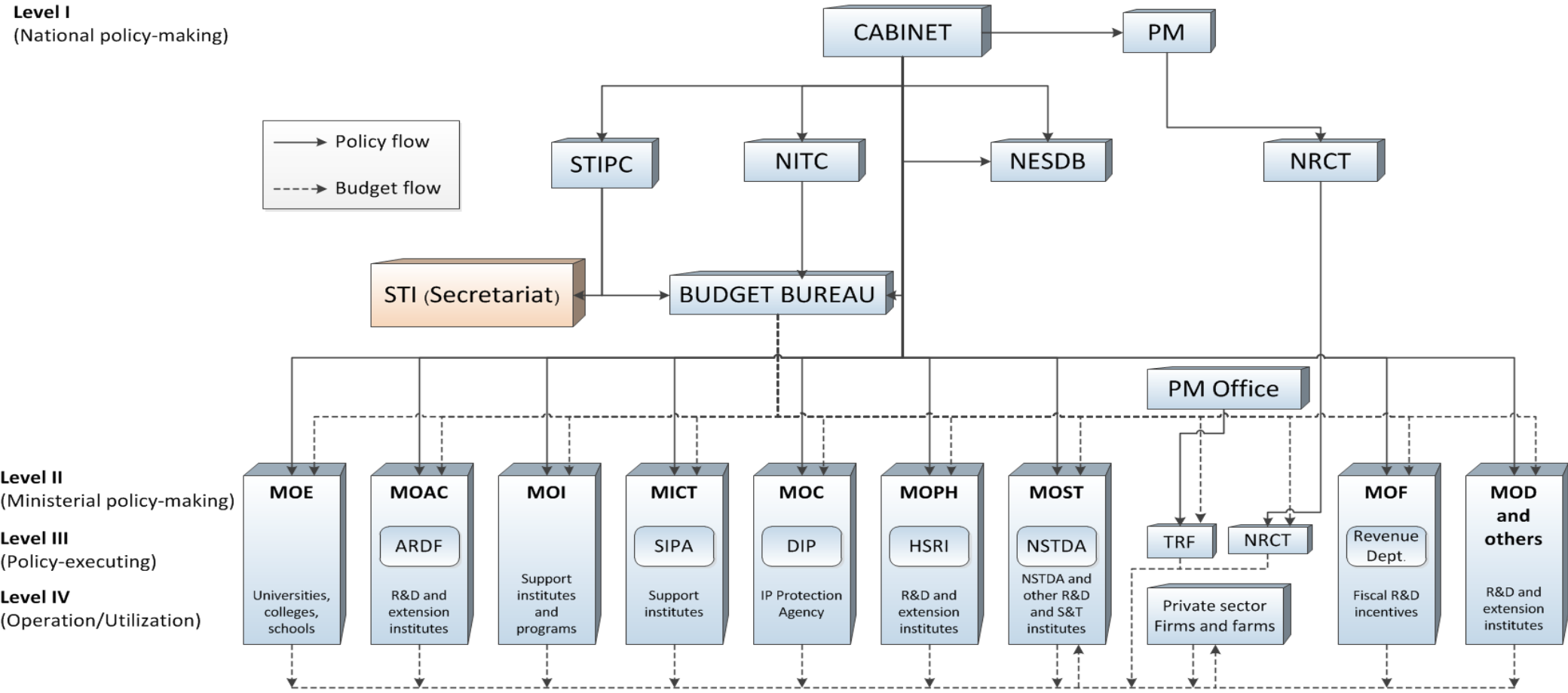
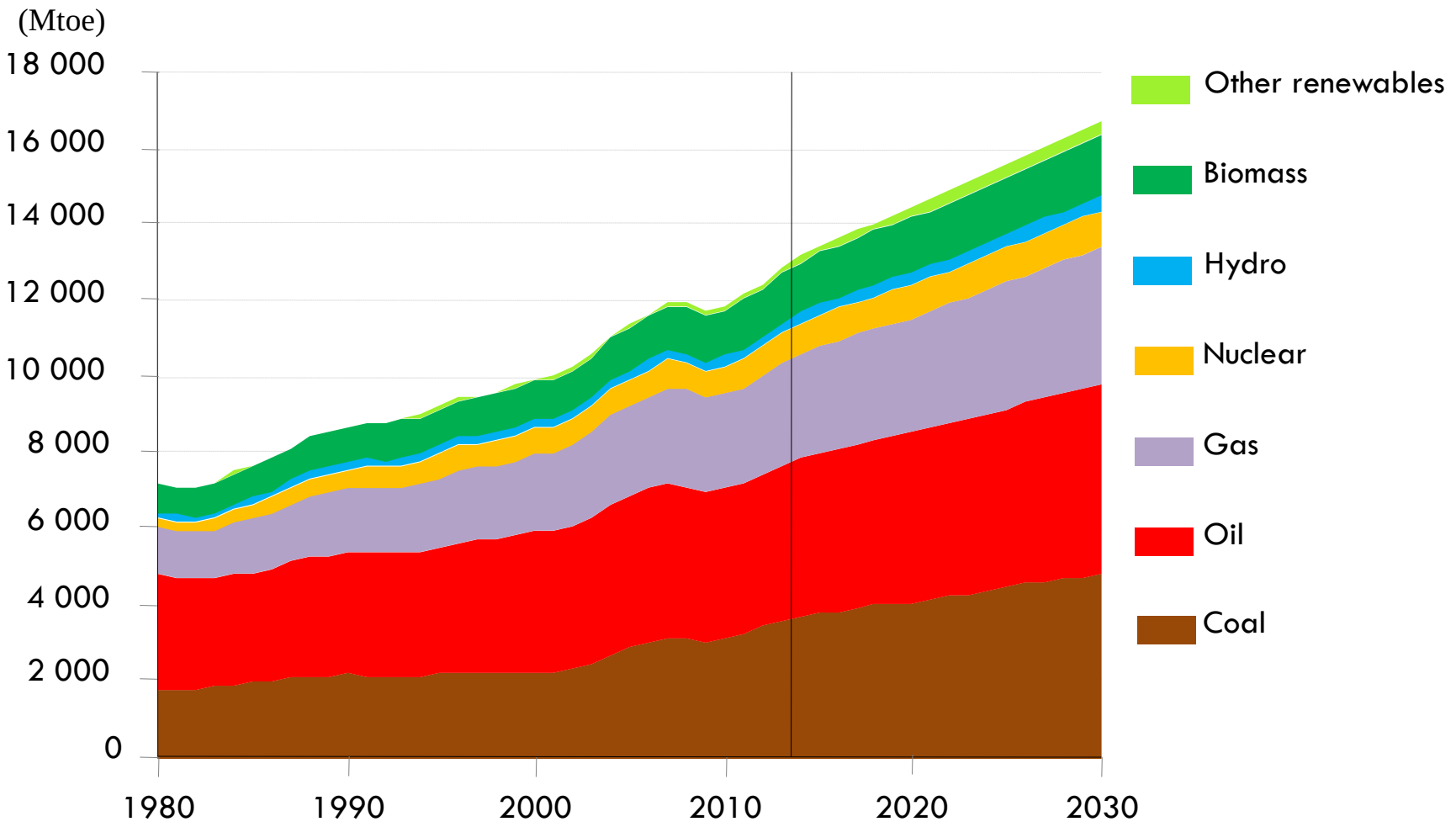
Regional Consultation Meeting on Science, Technology and Innovation for Promoting Renewable Energy Technologies for Sustainable Development in Asia and the Pacific
United Nations Conference Centre
Bangkok, Thailand
13 March 2013

Organizational Structure for Science Technology and Innovation policy system in Thailand



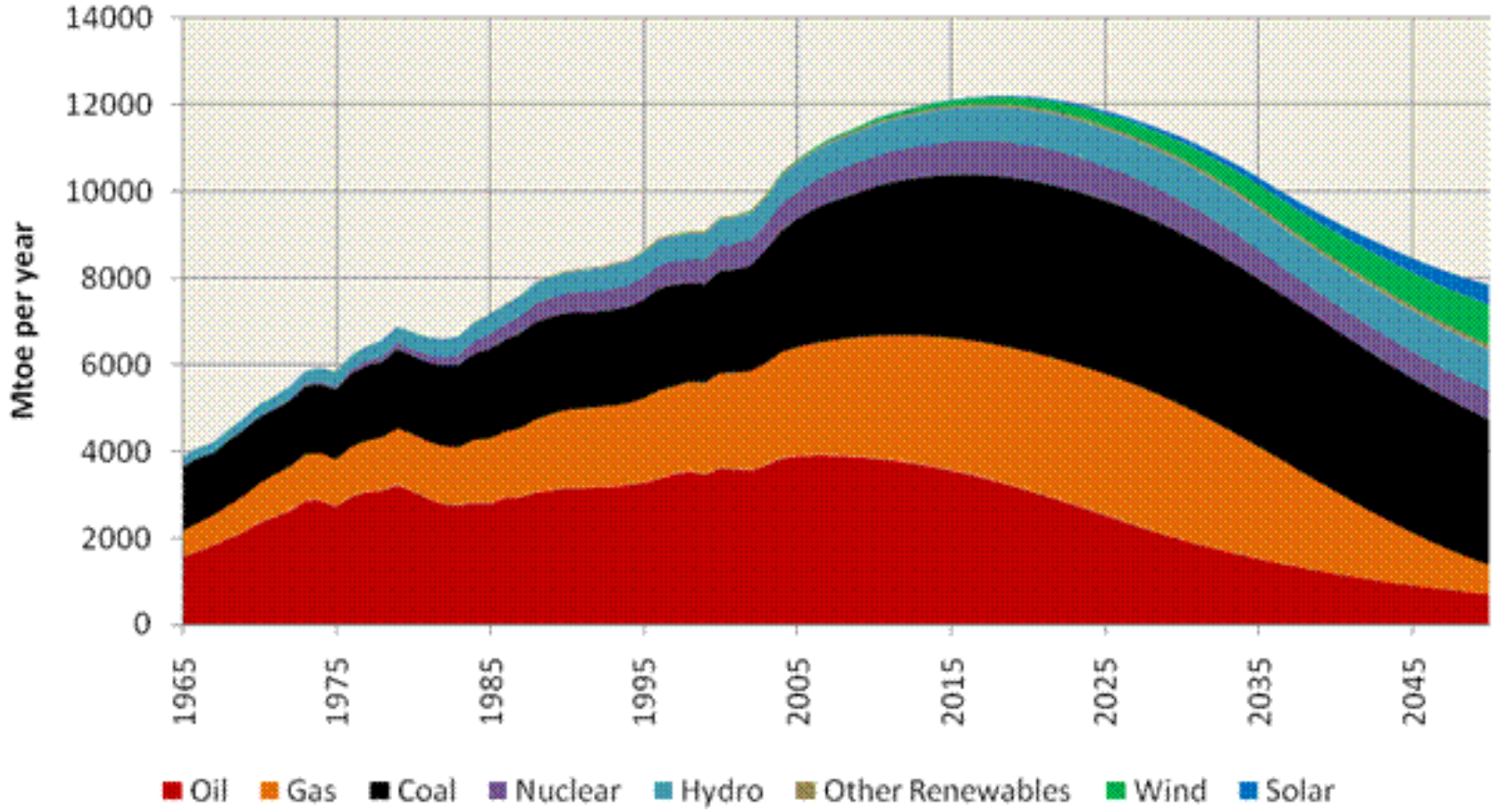
STI	= National Science Technology and Innovation Policy Office	MOST	= Ministry of Science and Technology
PM	= Prime Minister	MOF	= Ministry of Finance
STIPC	= National Science Technology and Innovation Policy Committee	MOPH	= Ministry of Public Health
NESDB	= National Economic and Social Development Board	MOD	= Ministry of Defense
NRCT	= National Research Council of Thailand	NSTDA	= National Science and Technology Development Agency
NITC	= National Information Technology Committee	SIPA	= Software Industry Promotion Agency
MOE	= Ministry of Education	TRF	= Thailand Research Fund
MOAC	= Ministry of Agriculture and Cooperatives	HSRI	= Health Systems Research Fund
MOI	= Ministry of Industry	ARDF	= Agricultural Research and Development Fund
MICT	= Ministry of Information and Communication Technology	DIP	= Department of Intellectual Property
MOC	= Ministry of Commerce		

World Energy Demand



Source: IEA

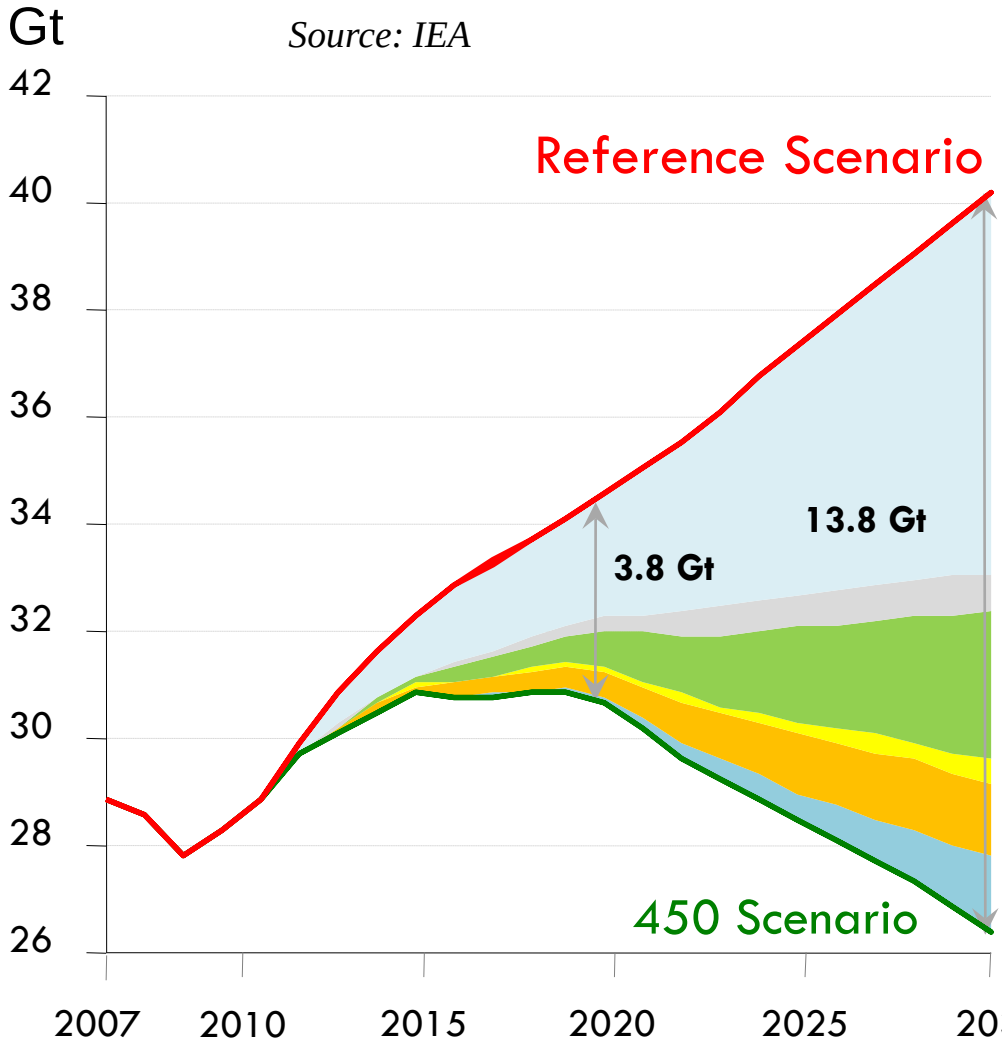
World Energy Sypply



Source: World Energy to 2050 Forty Years of Decline

Measures for GHG mitigation

Source: IEA



Share of abatement %

	2020	2030
Efficiency	65	57
End-use	*59*	*52*
Power plants	*6*	*5*
Renewables	18	20
Biofuels	1	3
Nuclear	13	10
CCS	3	10

Efficiency measures account for two-thirds of the 3.8 Gt of abatement in 2020, with renewables contributing close to one-fifth

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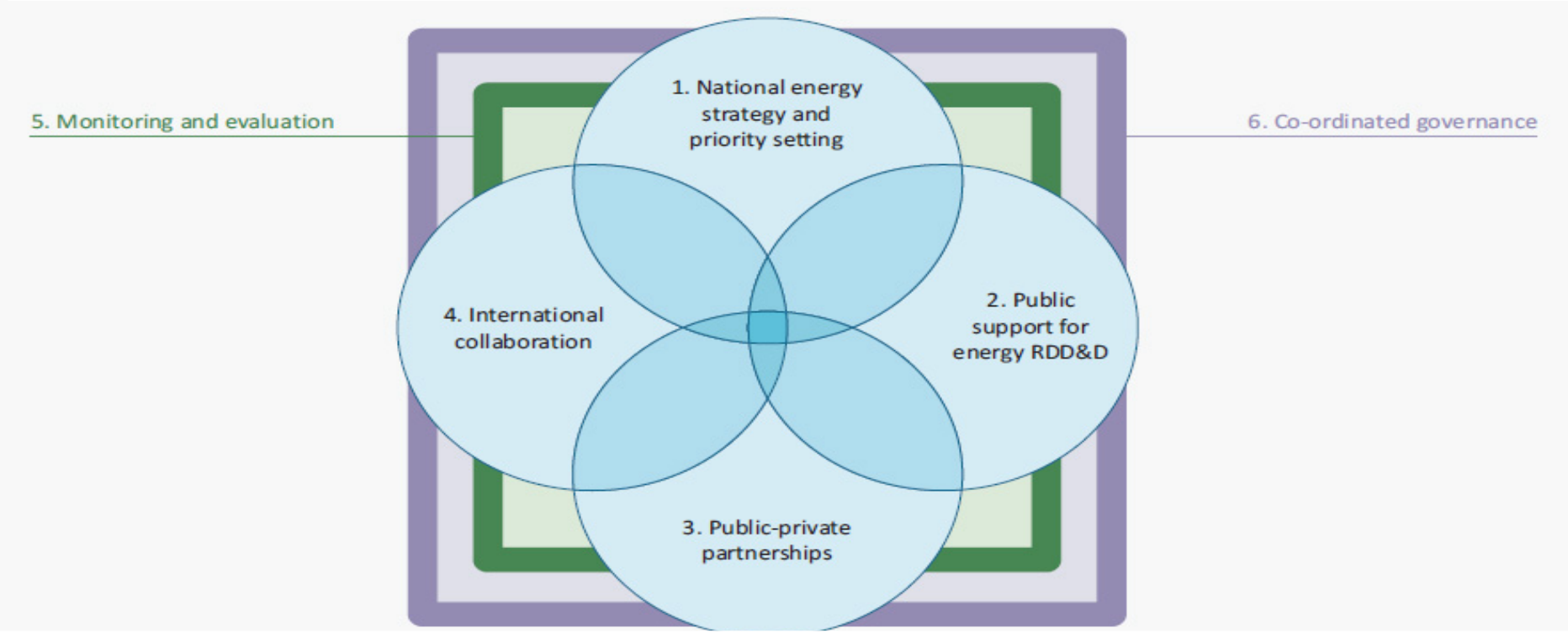
IEA's Recommendation for Good Practice Policy Frameworks

An energy innovation policy framework based on good practices



Governments should create an environment in which clean energy innovation can thrive and within which policies are regularly evaluated to ensure that they are effective and efficient.

Krabi Initiative

Science, Technology and Innovation (STI) for a Competitive , Sustainable and Inclusive ASEAN

Endorsed by ASEAN S&T Ministers at the 6th IAMMST as a policy framework for STI cooperation in ASEAN, December 2010

Rationale

- ASEAN 2015 – Vision of ASEAN Leaders
- Roles of STI – A Balance between Competitiveness and Human Development (People-oriented STI)
- Reinventing ASEAN Scientific Community for a Meaningful Delivery of STI Agenda in ASEAN

Thematic Tracks

- ASEAN Innovation for Global Market
- Digital Economy, New Media & Social Network
- Green Technology
- Food Security
- Energy Security
- Water Resource Management
- Biodiversity for Health & Wealth
- Science and Innovation for Life

Paradigm Shifts

- STI Enculturation
- Bottom-of-the - Pyramid (BOP) Focus
- Youth-focused Innovation
- STI for Green Society
- Public-Private Partnership Platform

Courses of Action

- Organisational restructure for a meaningful delivery of STI agenda in ASEAN
- Develop mechanisms to pursue partnerships and cooperation with other stakeholders in STI
- Enhance ASEAN Plan of Action on S&T for 2012-2015 and leverage the recommendations of the Krabi Retreat for development of future APAST beyond 2015
- Implement monitoring and evaluation mechanism for the implementation of STI thematic tracks

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National Framework for STI and Energy Research

Source: STI (2010), STI Policy on Energy

Critical National Issues

- Energy security
- Climate change
- Competitiveness
- Energy access

National Strategies & Plans

- Power Development Plan
- Alternative Energy Development Plan
- Energy Conservation Plan
- National Strategies for Climate Change
- National Economic & Social Development Plan

Energy Research Goals

- Energy supply diversification
- Energy-related CO_2 emission reduction
- Accessible clean energy for rural sector
- Energy efficiency improvement
- Energy and technology cost reduction
- Enhanced capacity for local manufacture of energy equipment

Target Areas

Energy Efficiency	Renewable Energy for Heat & Power	Alternative Transport Fuels	Clean Use of Fossil Fuels	Power System and Energy Storage	Nuclear Energy	Rural Energy System

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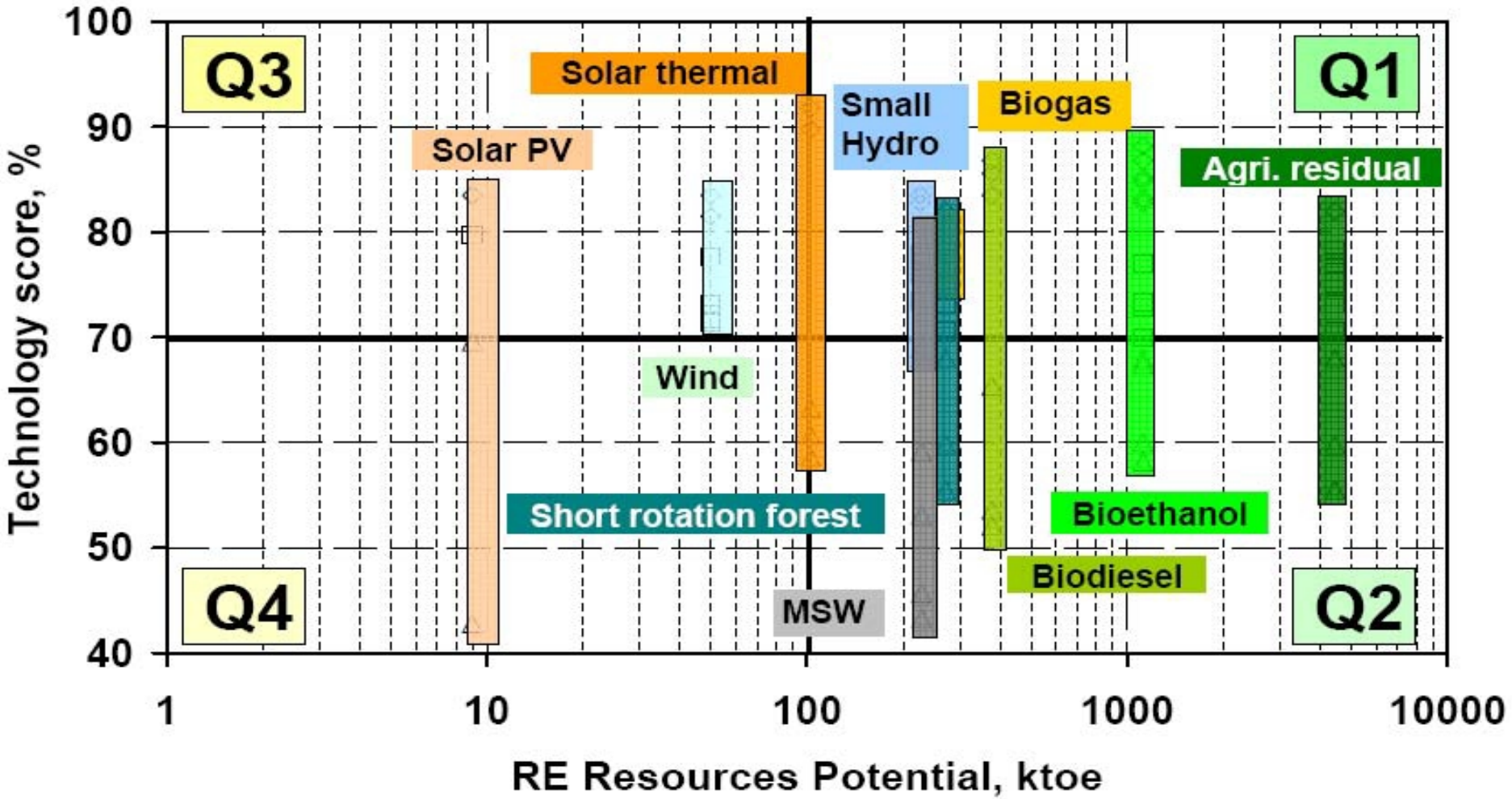
Preferred Direction

1. Decouple energy growth and economic growth
2. Shift away from dependence oil and gas-fired electricity
3. Transformation: timely and cost-effective shift to a new energy paradigm, eventually to low carbon energy system
4. Improvement of current technologies and development of transformative ones

Source: STI (2010), STI Policy on Energy

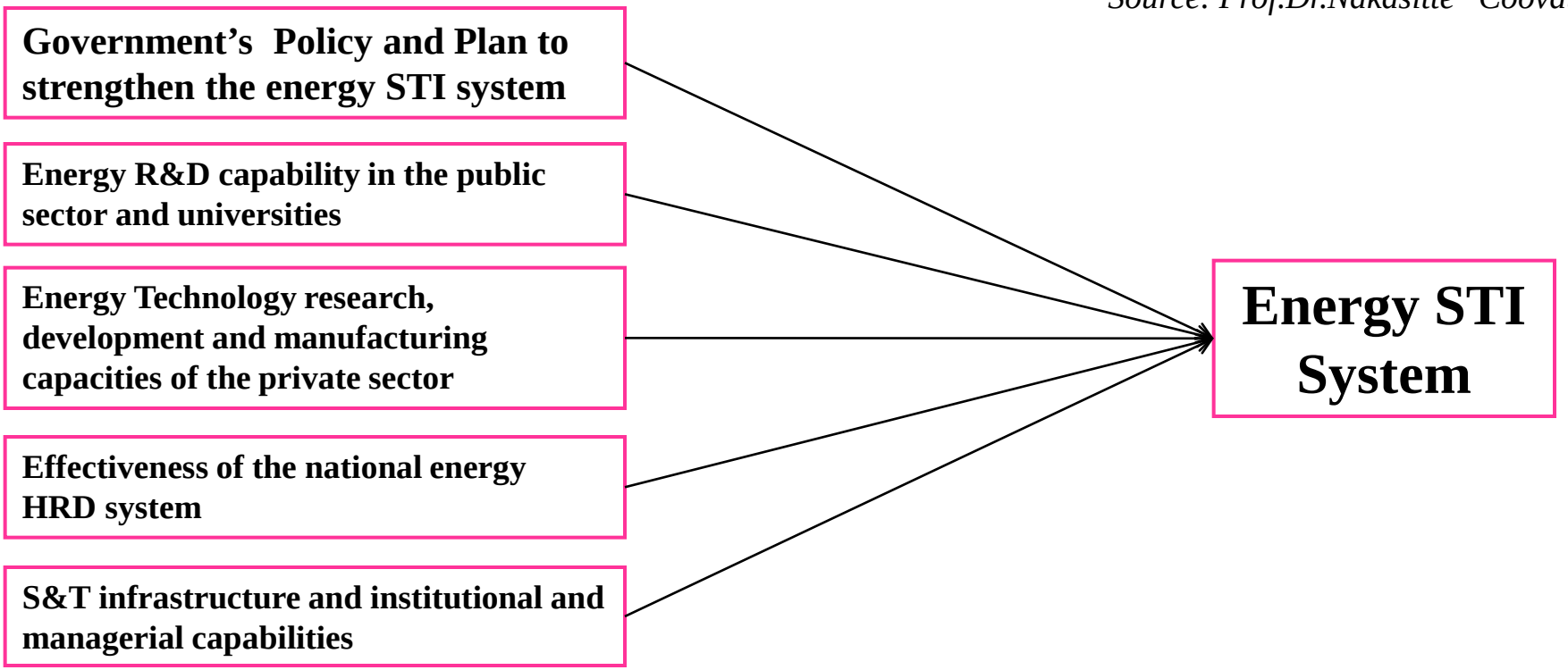
Potential vs Technology of RE



Source: Thailand Research Fund (2007), Research on Energy Policy for Renewable Energy and Energy Efficiency Development in Thailand, Final Report

Strategies for Strengthening the Energy STI System

Source: Prof.Dr.Nakasitte Coovattanachai



To achieve sustainable development the national energy STI system must be strong enough to absorb, adapt, develop, improve, manufacture and diffuse most energy technologies locally.

Strategies for Strengthening the Energy STI System

National Science Technology and Innovation

- Research and Development
- Innovation
- Technology Transfer
- Human Resources
- STI Infrastructure
- Enabling Environment

THANK YOU

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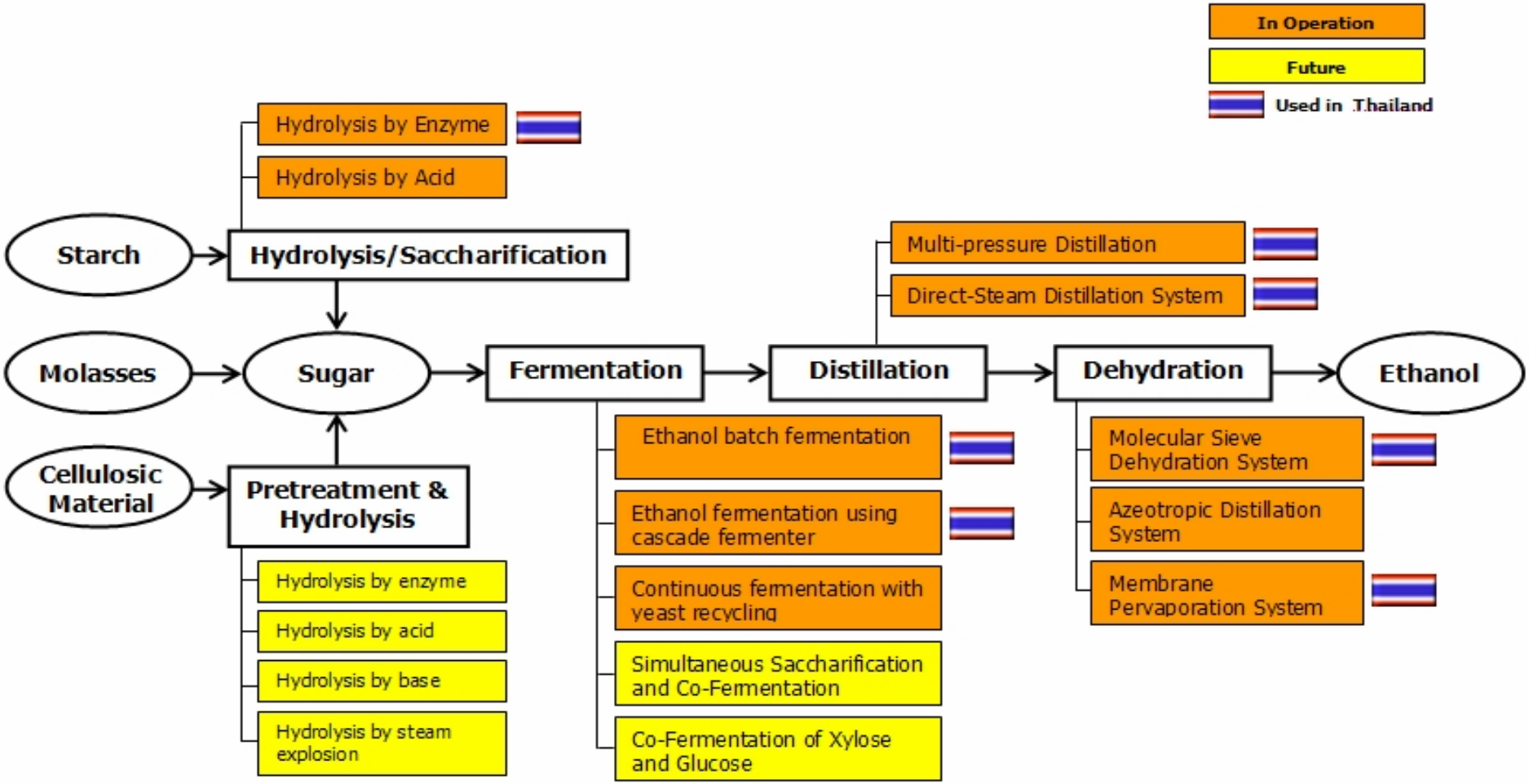
Back-Up Slides

Bioethanol Technology Overview



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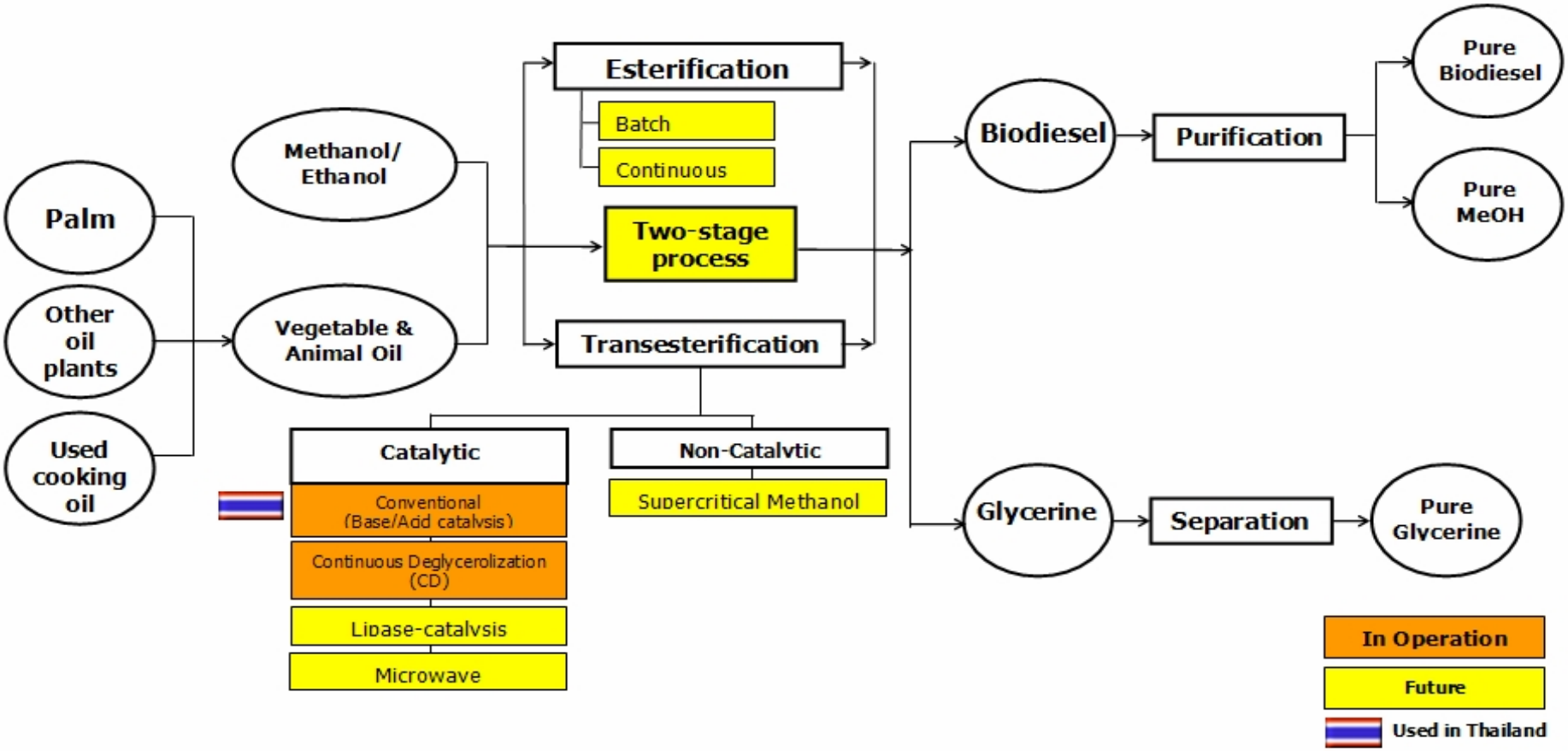
Biodiesel Technology Overview



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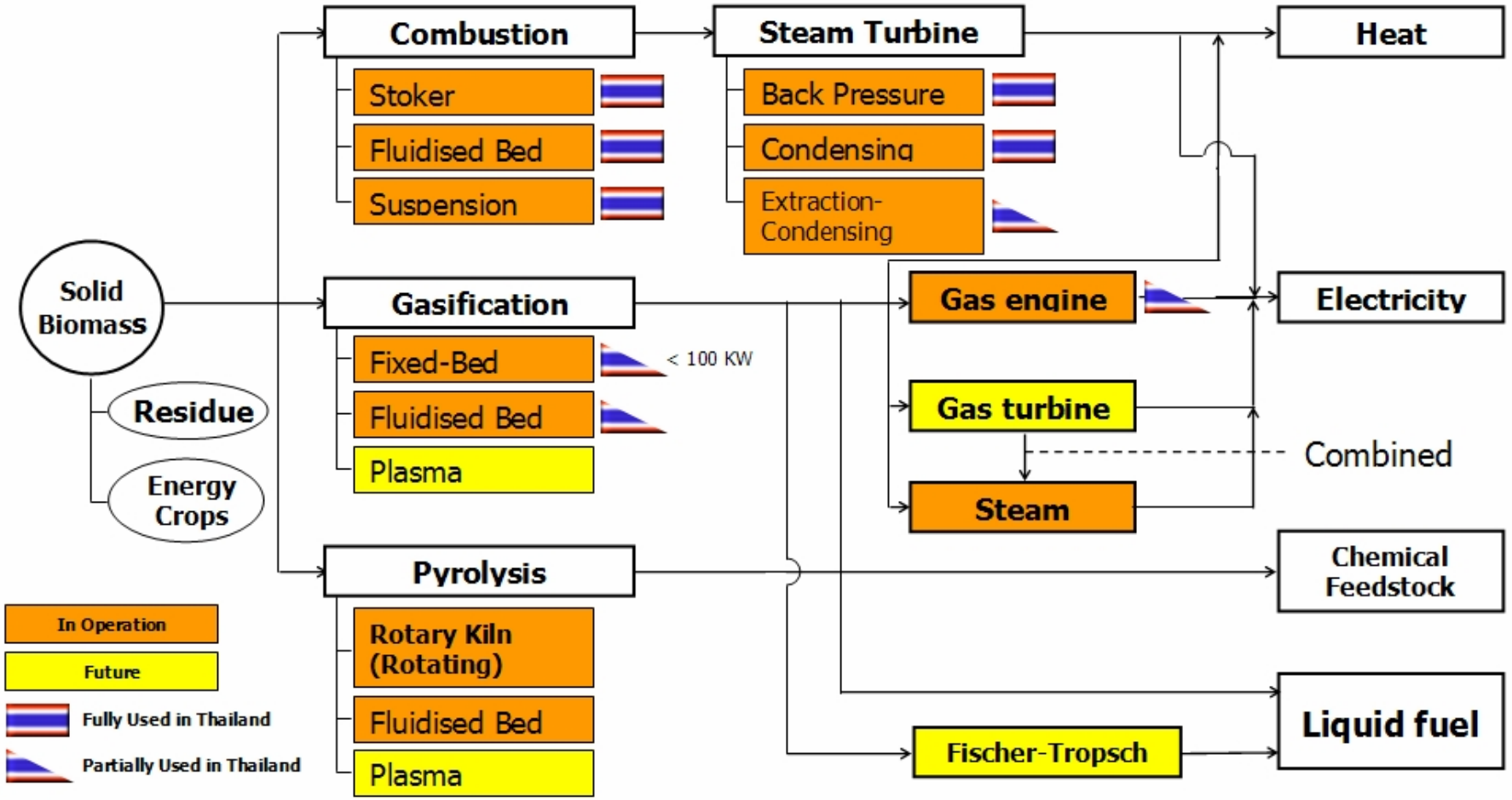
Biomass Technology for Heat and/or Power



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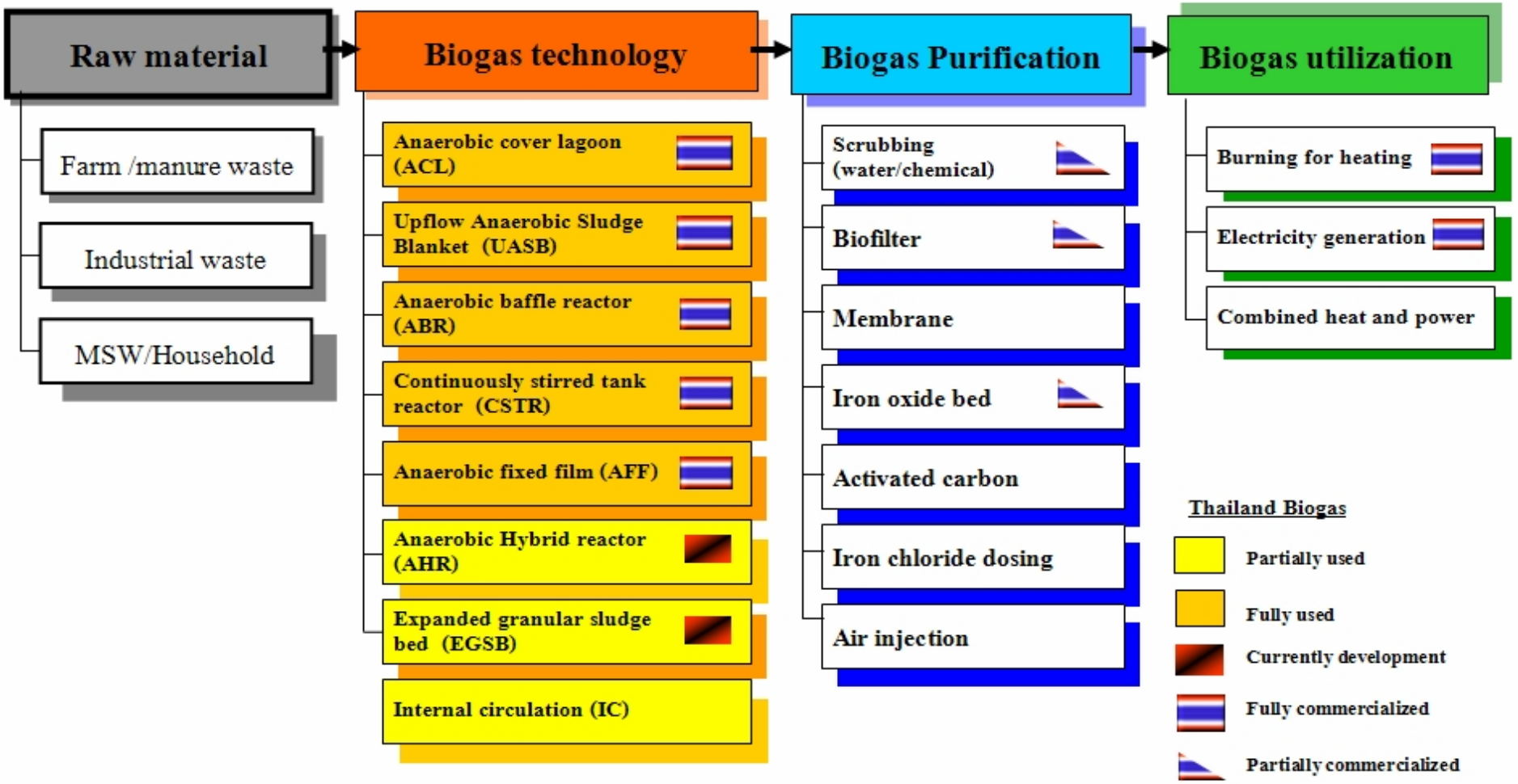
Biogas technology overview



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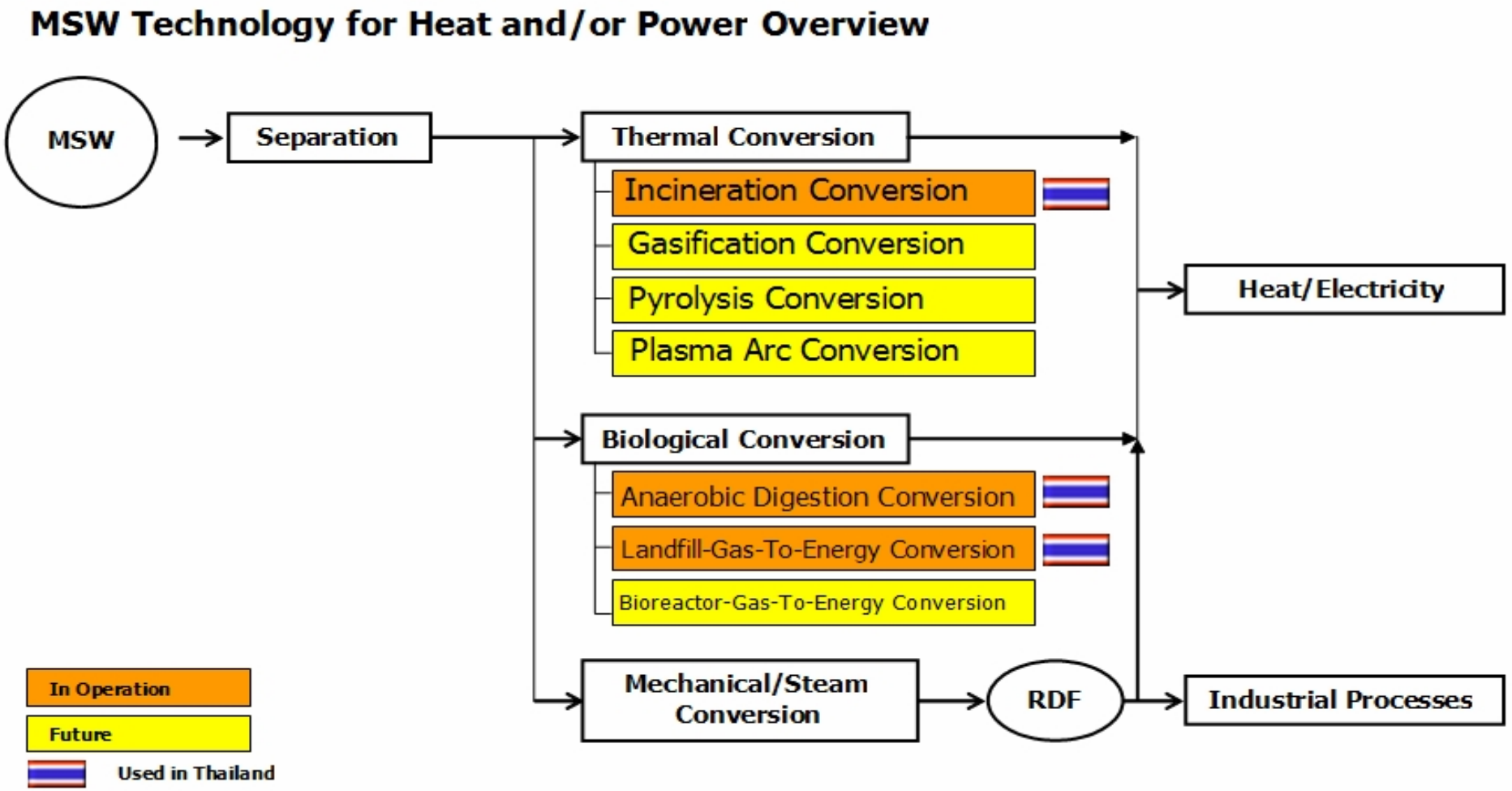
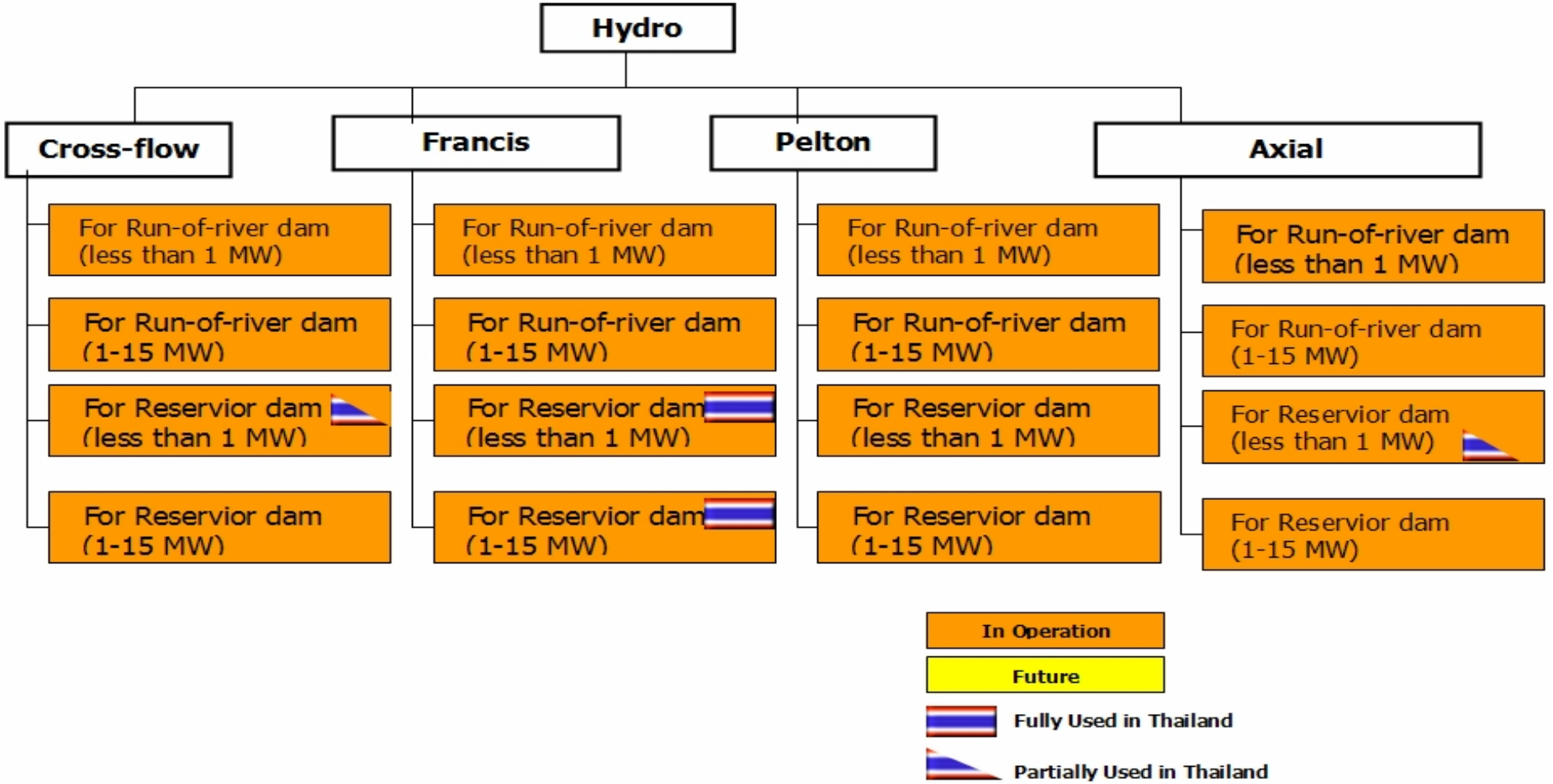
MSW Technology for Heat and/or Power Overview



Source: Thailand Research Fund (2007), Research on Energy Policy for Renewable Energy and Energy Efficiency Development in Thailand, Final Report

Small Hydro Power Overview



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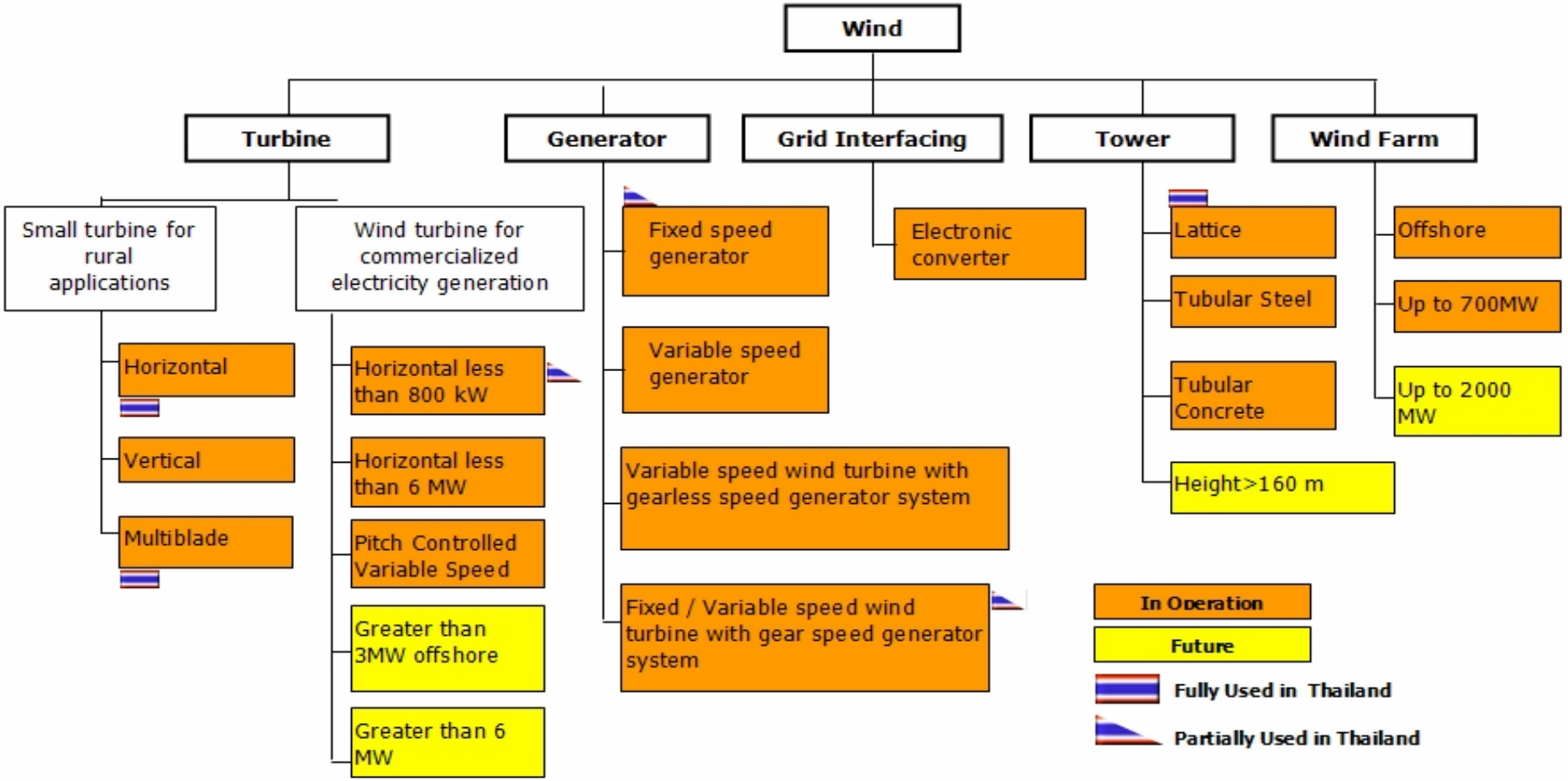
Wind Technology Overview



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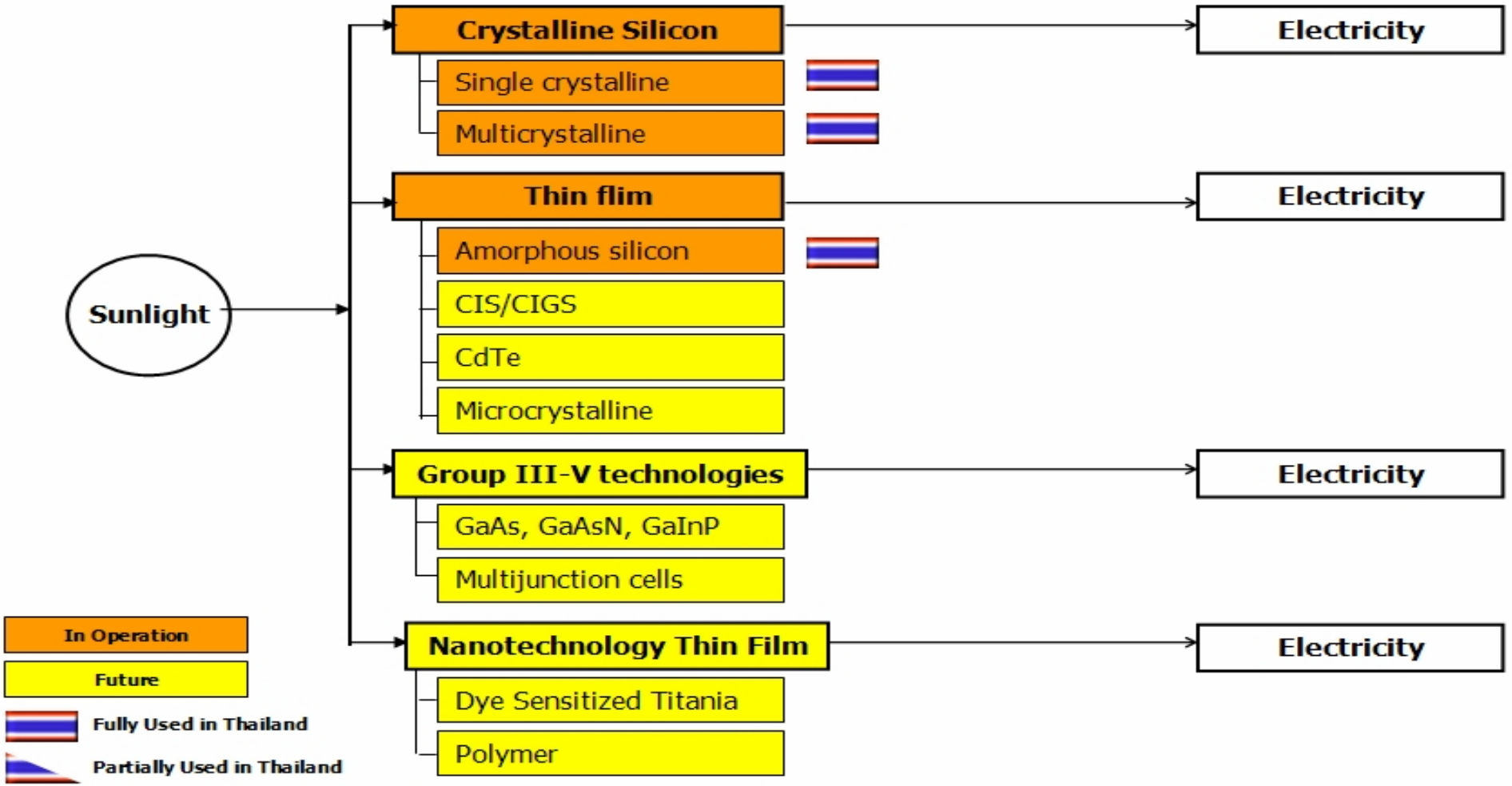
Photovoltaic Technology Overview



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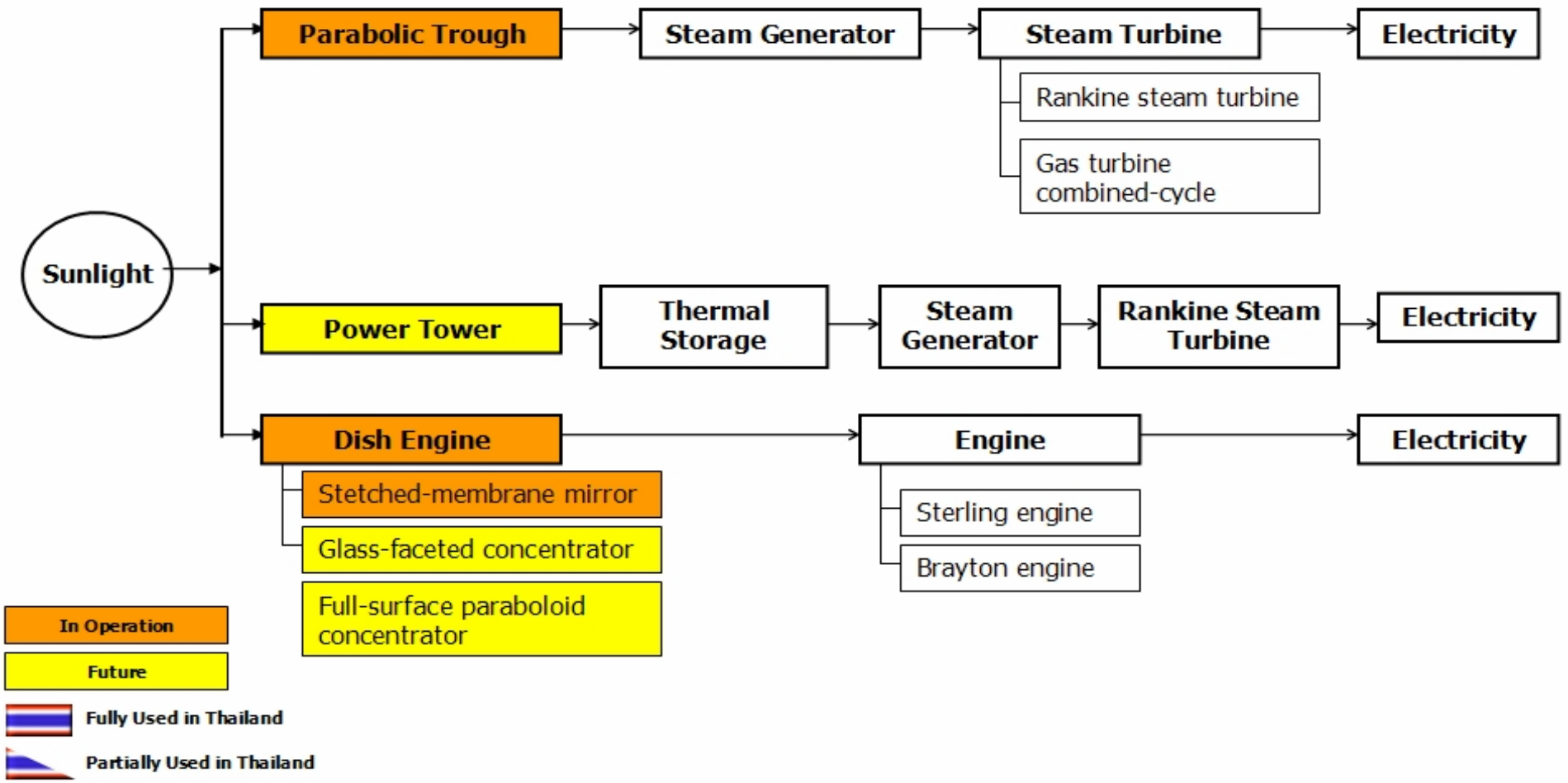
Concentrating Solar Power Technology Overview



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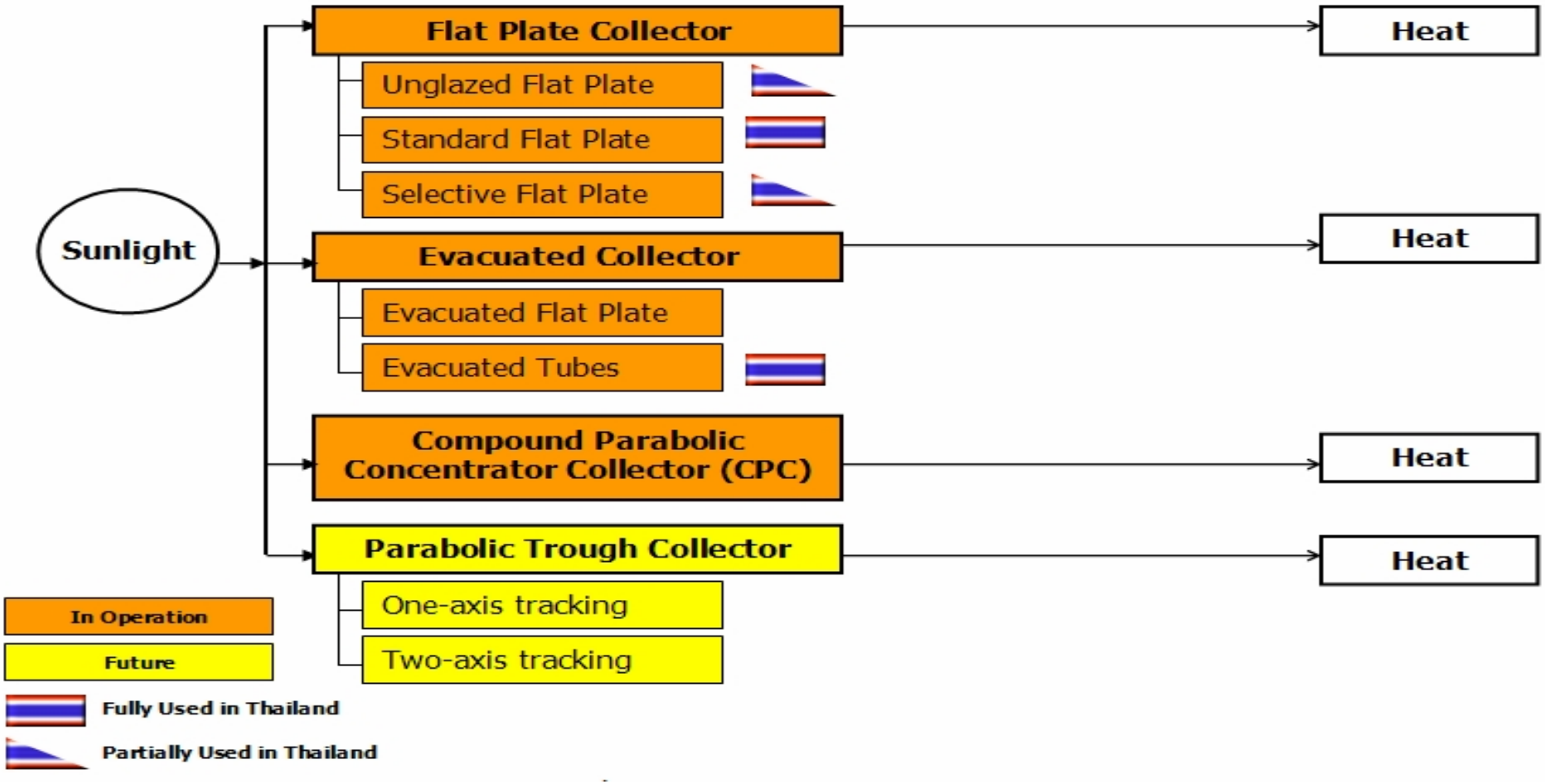
Low Temperture Solar Thermal Technology



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