

Energy Challenges for ASEAN

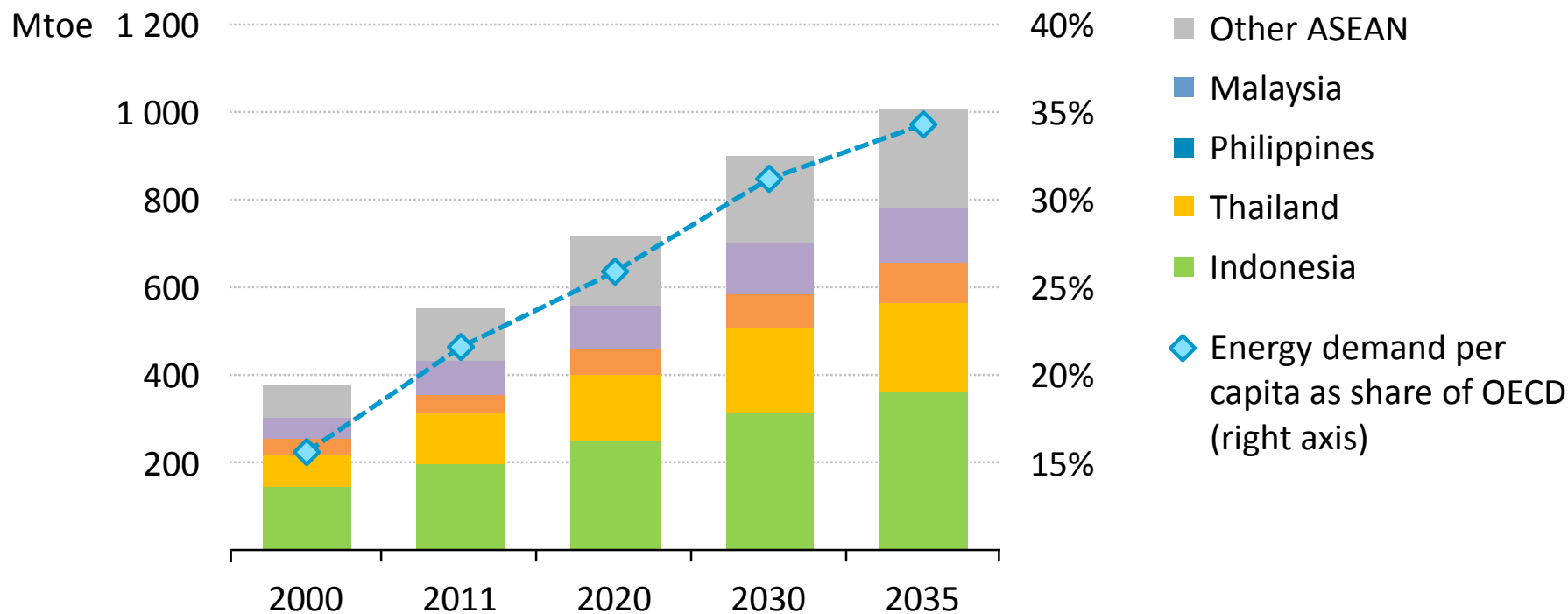
Ingrid Barnsley,
Head, International Partnerships and Initiatives, IEA

Southeast Asia: the energy context

- Southeast Asia has emerged as a key player in the global energy system
 - growing thirst for energy driven by sustained economic & social development
- Diverse set of countries with vast differences in patterns of energy use
- Many of the individual countries increasingly reliant on energy imports
 - although region as a whole is rich in energy resources
- Fundamentals suggest energy needs will continue to grow
 - economy to triple by 2035, despite some headwinds at present
 - population of 600 million to expand by almost one-quarter by 2035
 - per-capita energy use is still low & 134 million people lack access to electricity

Southeast Asia's energy needs will continue to grow

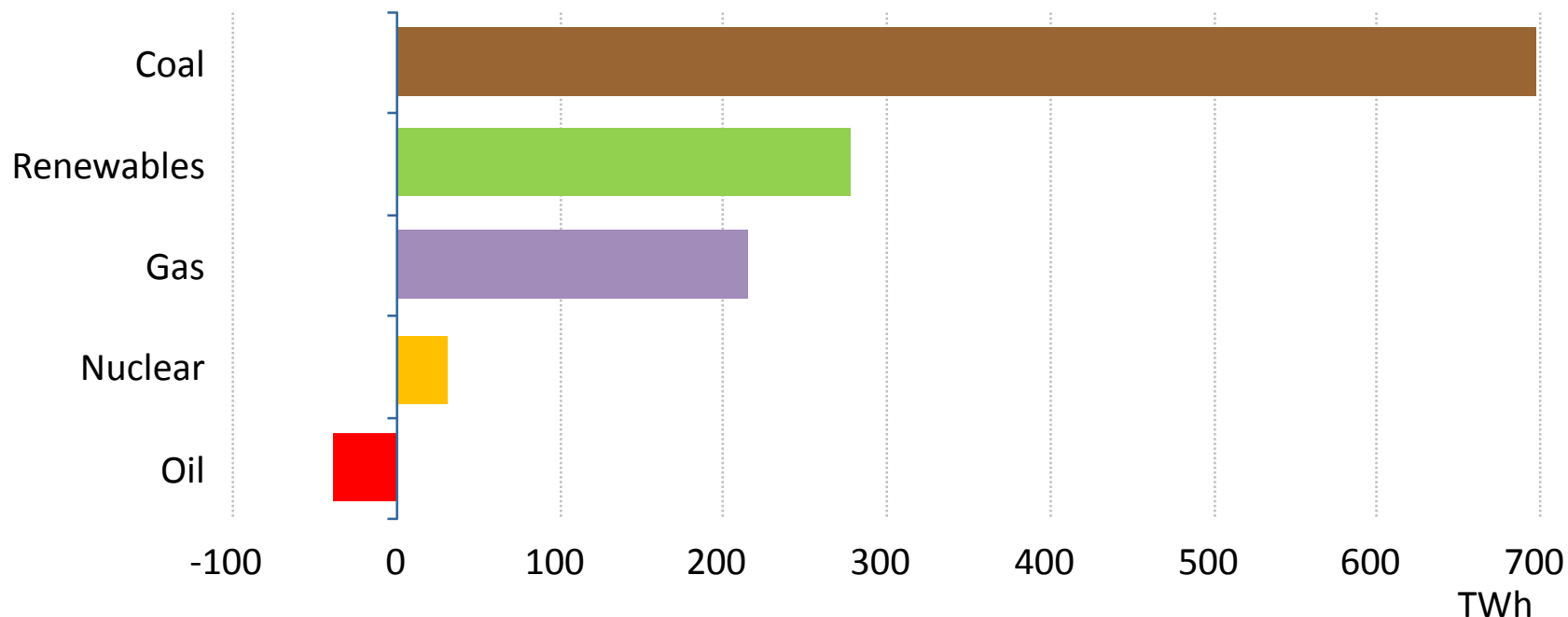
Growth in ASEAN primary energy demand



Southeast Asia's energy demand increases by over four-fifths in the period to 2035, or by more than the current consumption of Japan

The power sector is fundamental to the energy outlook of Southeast Asia

ASEAN incremental electricity generation by fuel, 2011-2035

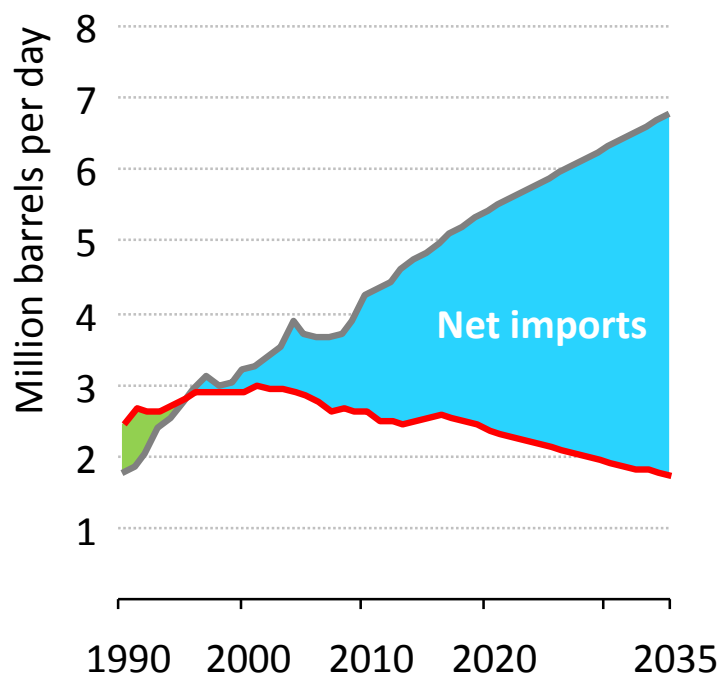


Electricity generation increases by more than the current power output of India; coal emerges as the fuel of choice, accounting for 58% of the growth

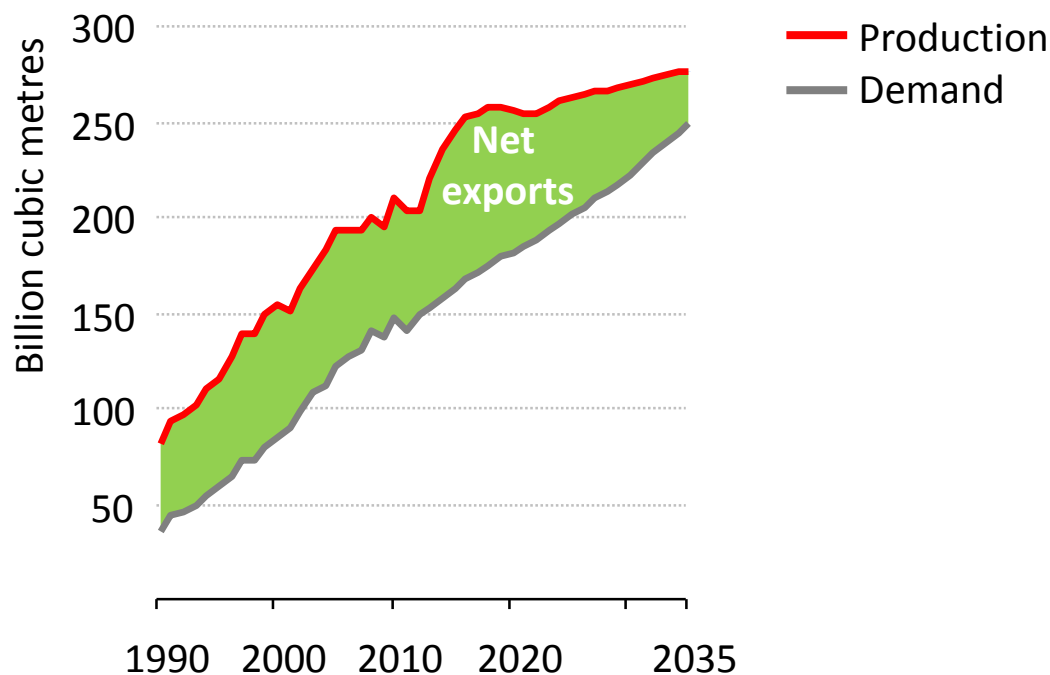
Production: oil in decline & gas struggling to keep up with demand

ASEAN oil and gas balances

Oil



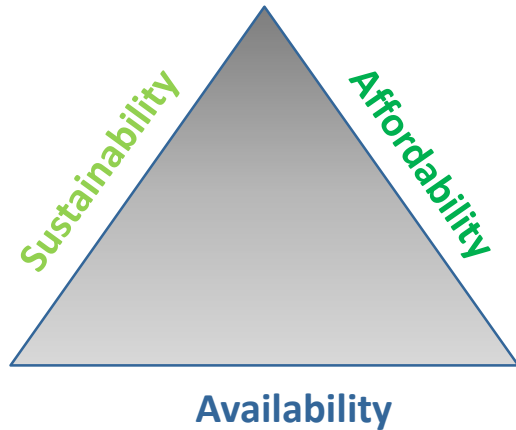
Gas



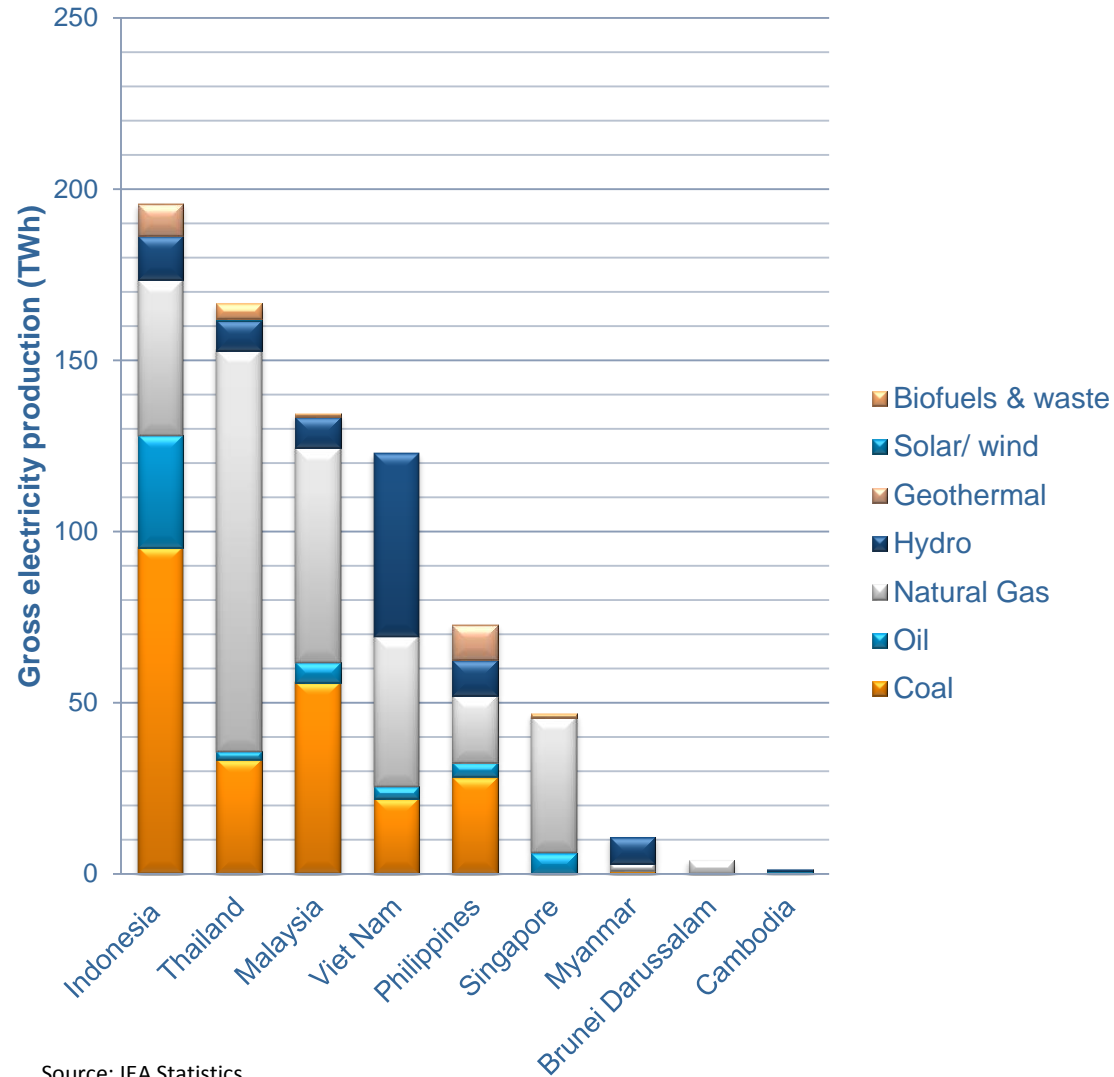
Southeast Asia becomes the world's fourth-largest oil importer (behind China, India and the EU) & sees a vastly reduced surplus of natural gas for export

Drivers for Regional Electricity Market

~Endogenous resources in abundance



Better co-ordination needed to optimise resources



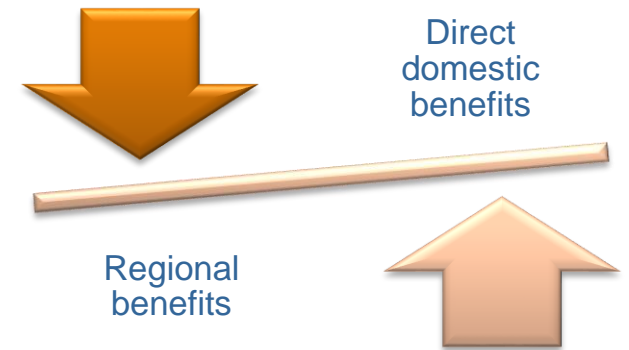
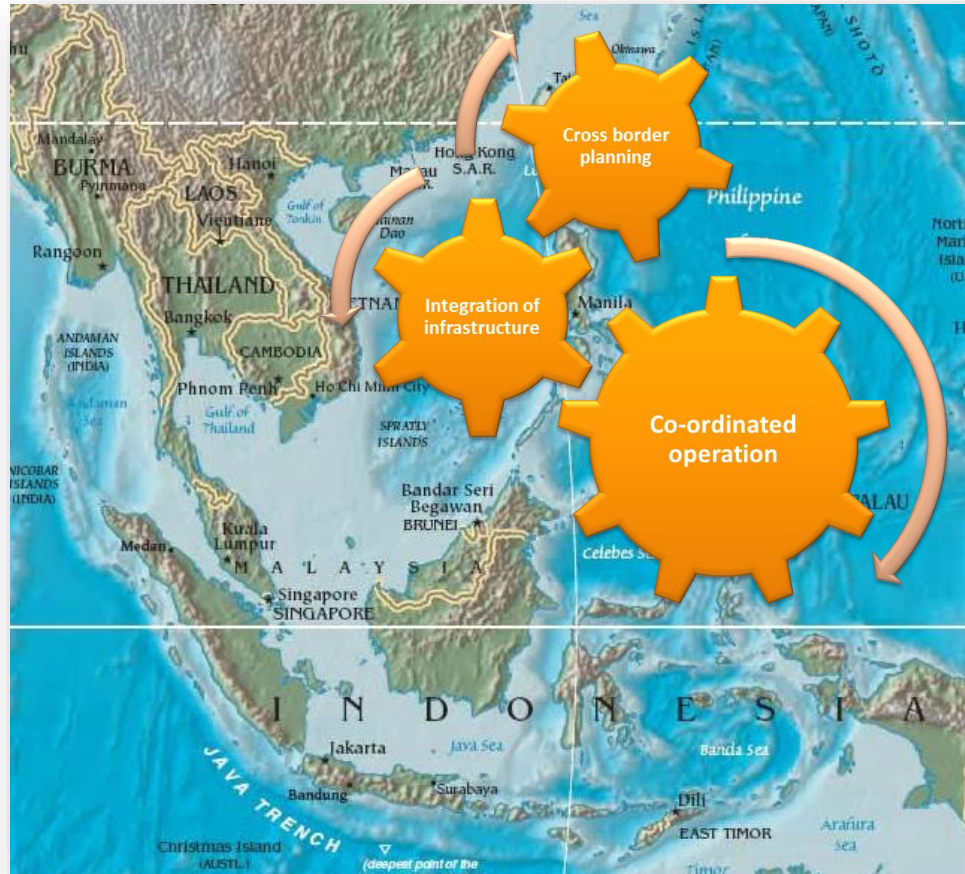
Source: IEA Statistics

Challenges for Regional Power Integration



Natural & man-made

- Integration of infrastructures
- Financing issues
- Power tariffs
- Market structure
- Technical characteristics
- Governance & institutional structures



IEA recommendations on ASEAN electricity market

- Electricity market integration in the ASEAN requires
 - i. development of the regional power infrastructure supported by regional funding sources
 - ii. establishment of a regional power market; and
 - iii. governance structures which support the identification, development and operation of an adequate mix of supply-, and demand-side technologies on a national and regional level
 - iv. harmonization of national policies and regulatory frameworks which also stimulate the integration of renewable power generation.

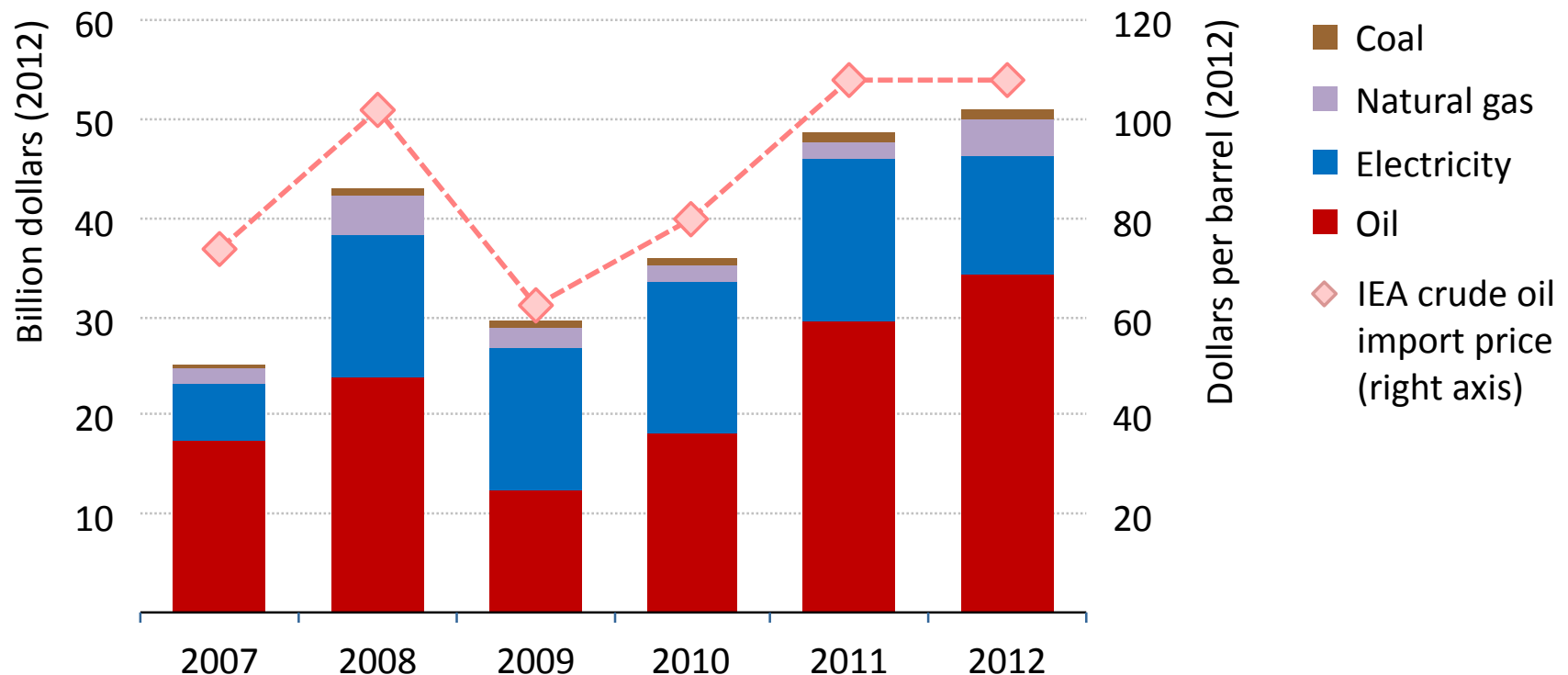
- Inadequate system planning, insufficient awareness and real-time management capabilities can cause cross-border blackouts.
- The harmonization of regulations and standards is necessary to achieve gains from trade in natural resources and electricity, and to benefit from market-led investments and trade.
- A **depoliticized** power system with clear and reliable governance and regulatory frameworks can establish reliable business cases which will attract efficient and private-based investors.

IEA draft recommendations on gas in SE Asia

- Encourage investment and cooperation for gas infrastructure
- Increase intra-region LNG trading to enhance regional energy security
- Promote best practices on regulation
- Initiate discussions on pricing trends and strategies
- Develop diversified and flexible price mechanism
- Identify impact of continuing gas subsidies on creation of trading hub

Fossil fuel subsidies continue to distort energy markets

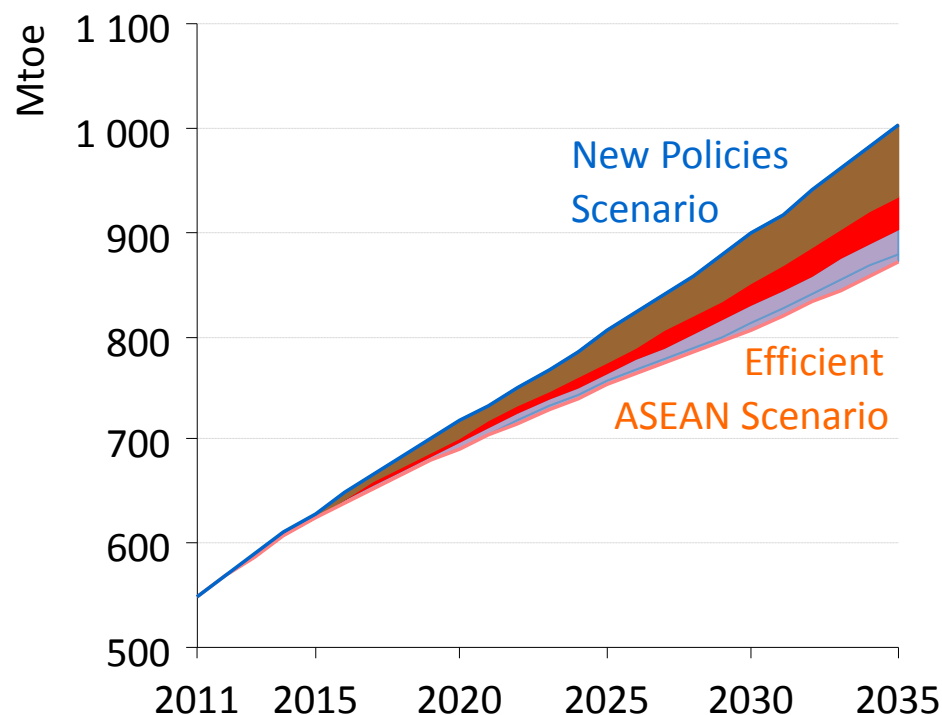
Value of fossil-fuel subsidies in Southeast Asia, 2007-2012



Fossil-fuel subsidies amounted to \$51 billion in 2012; recent reforms in Indonesia & Malaysia are notable – help to remove distortion on energy markets

Energy efficiency: a huge opportunity going unrealised

ASEAN primary energy demand in the Efficient ASEAN Scenario relative to the New Policies Scenario



Savings in 2035	
Coal	100 Mtce
Oil	0.7 mb/d
Gas	28 bcm

Economically viable efficiency measures can cut the region's energy use in 2035 by almost 15%, or more than the current energy use of Thailand

Southeast Asia: an emerging giant of the global energy market

- **Southeast Asia – along with China & India – is shifting the centre of gravity of the global energy system to Asia**
- **Its outlook for energy production & demand has implications that will be felt well beyond the region**
- **Developing policies to improve efficiency & attract investment will be vital for enhancing energy security, affordability & sustainability**
- **The region faces global challenges, underscoring the need to enhance cooperation intra-regionally & with international partners**

Moves toward regional energy market

~Achieving common goals



Program Area	Strategies	Ownership
1. ASEAN Power Grid	<ul style="list-style-type: none"> Accelerate the development of the ASEAN Power Grid Interconnection projects Optimize the generation sector vis-à-vis the available indigenous energy resources in the region Encourage and optimize the utilization of ASEAN resources, such as, funding, expertise and products to develop the generation, transmission, and distribution sectors 	HAPUA
2. Trans-ASEAN Gas Pipeline	<ul style="list-style-type: none"> Collectively implement the ASEAN MOU on TAGP by ASCOPE Members PERTAMINA and PSC Partners to undertake detailed feasibility study for East Natuna Gas Field Development Implement the approved Roadmap for TAGP by respective ASCOPE Members Implement the approved 5-year ASCOPE Gas Centre (AGC) Work Program 	ASCOPE
3. Coal and Clean Coal Technology	<ul style="list-style-type: none"> Strengthen Institutional and Policy Framework and build an ASEAN Coal Image Promote Coal and Clean Coal Technologies Promote Intra-ASEAN Coal Trade & Investment Enhance environmental planning and assessment of coal projects 	AFOC (ACE as Secretariat)
4. Energy Efficiency and Conservation	<ul style="list-style-type: none"> Develop Energy Efficiency Policy and Build Capacity Enhance awareness raising and dissemination of information Promote good energy management practices, especially for industrial and commercial sectors Facilitate Energy Efficiency Financing 	EE&C-SSN (ACE as Secretariat)
5. Renewable Energy	<ul style="list-style-type: none"> Increase the development and utilization of RE sources to achieve the 15% target share of RE in ASEAN power generation mix Enhance awareness and information sharing and strengthen networks Promote intra-ASEAN cooperation on ASEAN-made products and services Promote renewable energy financing scheme Promote the commercial development and utilization of biofuels Develop ASEAN as a hub for renewable energy 	RE-SSN (ACE as Secretariat)
6. Regional Energy Policy and Planning	<ul style="list-style-type: none"> Enhance energy policy and supply security information sharing network Conduct capacity building in energy and environmental policy planning and energy supply security assessment Prepare regional energy outlooks and conducting ASEAN energy policy reviews and analysis series Strengthen collaboration and dialogues with ASEAN partners and with national, regional and global institutions Monitor and evaluate the progress of APAEC programs 	REPP-SSN (ACE as Secretariat)
7. Civilian Nuclear Energy	<ul style="list-style-type: none"> Conduct capacity building among ASEAN Member States Strengthen public information and public education on nuclear power generation Strengthen institutional, legal and regulatory capacities on nuclear energy for power generation. 	(ACE as Secretariat)

