



Energy Policy & Systems Analysis Project

**ETSAP Annex IX Technical Conference
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**Energy Policy Analysis Using MARKAL
in the ASEAN Region**

presented by

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Presentation Outline

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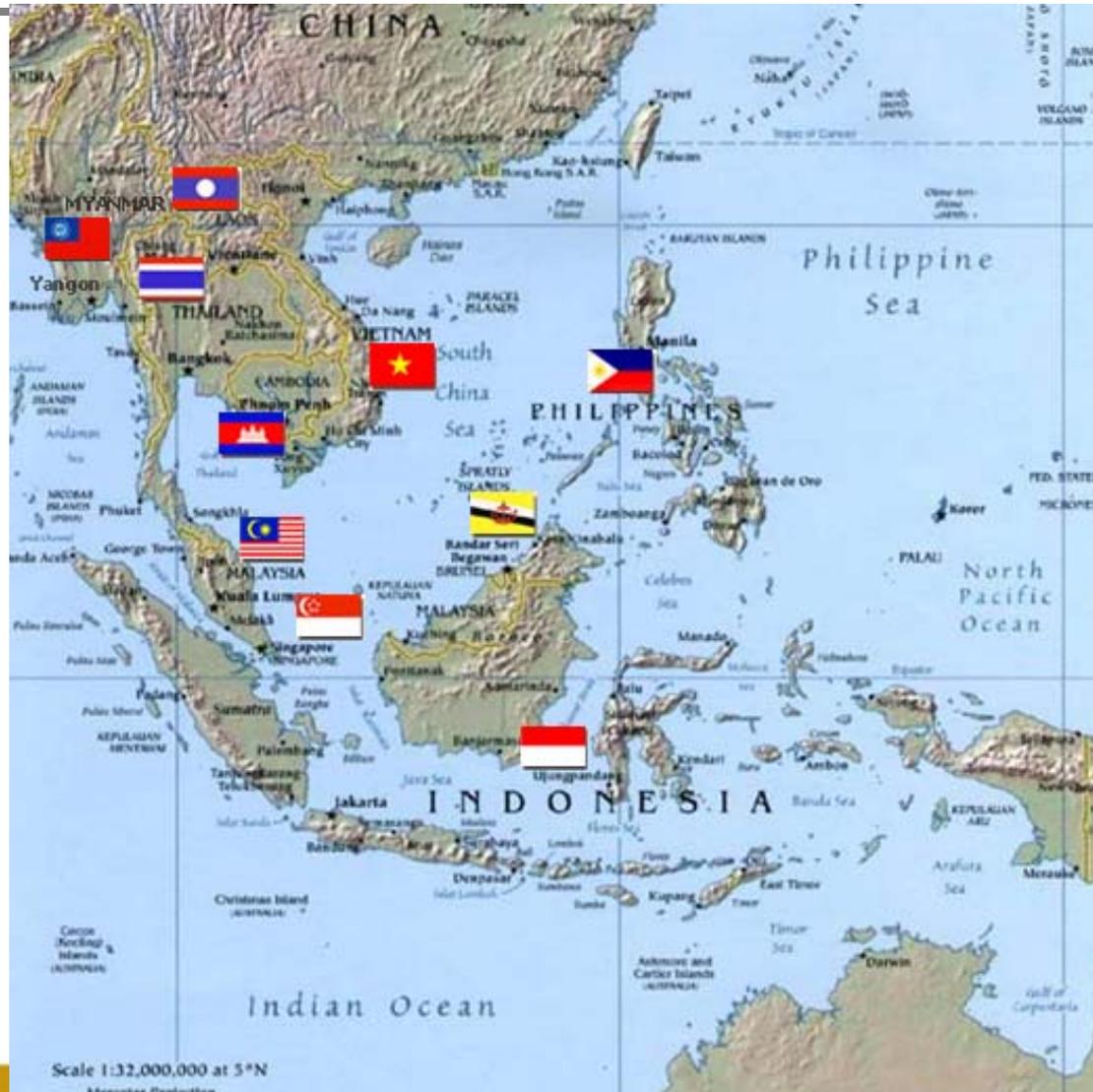


ASEAN-Australia Energy Policy and Systems Analysis Project

- **Funded by AusAID**
- **Participating countries are Indonesia, Malaysia, Philippines, Thailand and Vietnam**
- **Original project lasts 3.5 years; commenced in February 2003**
- **A later parallel project includes Cambodia, Laos and Myanmar**
 - **But shorter duration, smaller budget.**
- **Therefore includes all but Singapore and Brunei in the ASEAN region**
 - **Covering more than 500 million people of diverse languages and cultures**



ASEAN Map





Project Goal

- ***“The overall goal of the project is to enhance the capacity of ASEAN energy policy makers and planners to assess the impacts and cost effectiveness of alternative energy policy options which could assist countries to formulate policies and programs to help meet the demand for energy services at least cost.”***

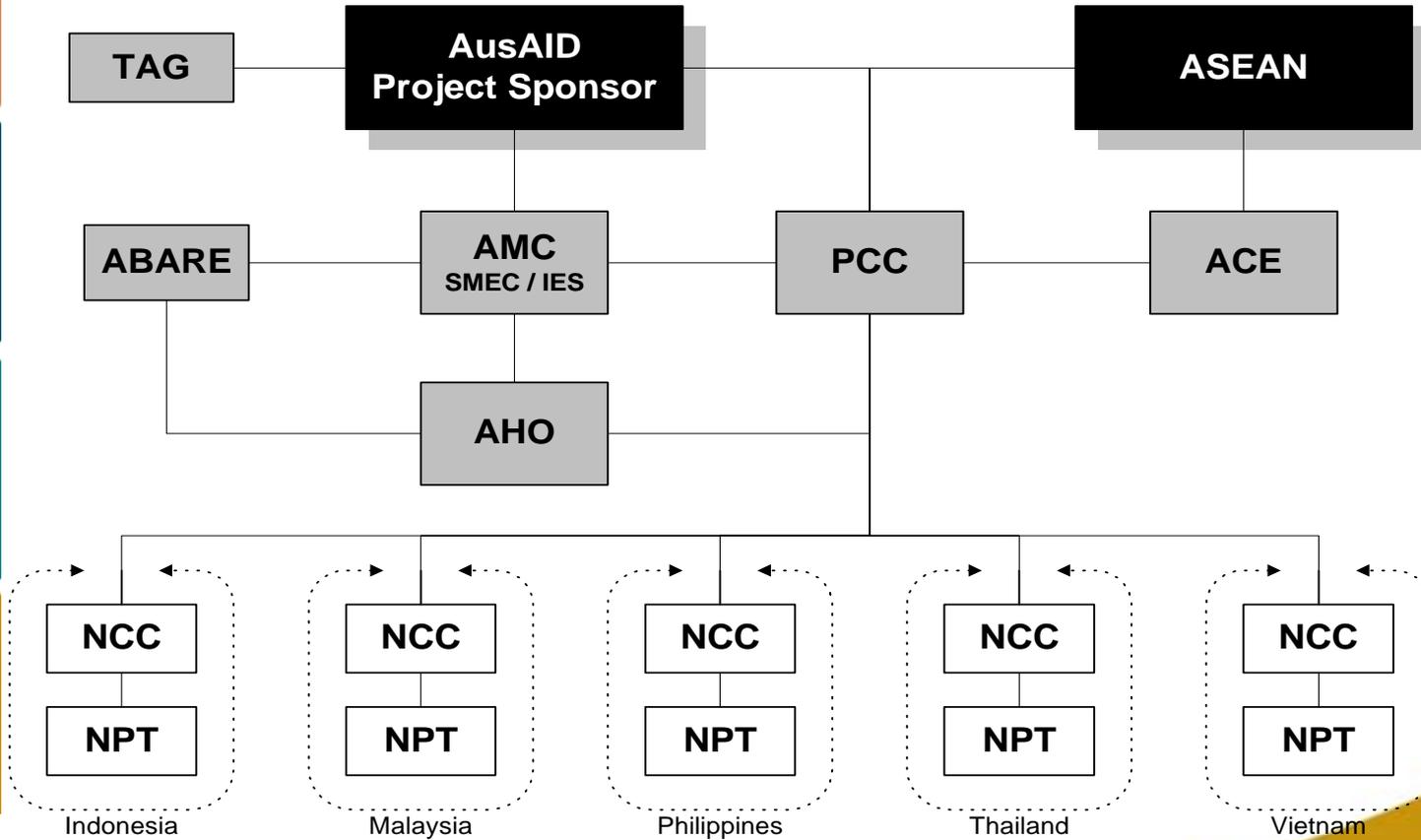


Project Objectives

- *To increase the awareness of policy makers of the range of policy options available to tackle economic, technical and environmental problems associated with energy sector activities;*
- *To provide participating ASEAN countries with an opportunity to develop an autonomous energy sector modelling capacity (using MARKAL technology) that can be used to assist policy and other decision makers to identify least cost options for meeting the demands for energy services;*
- *To enhance policy research and analysis links between the relevant energy research and policy agencies within participating ASEAN countries and in Australia;*
- *To develop and strengthen the level of energy sector analysis and research, using a common methodological framework (i.e. MARKAL) for ASEAN countries and Australia; and*
- *To provide a mechanism to enable regional cooperation, information and technical exchanges between project participants on energy sector analysis and policy issues.*



Project Organisation





Current AMC/ACE Personnel

- **Project Director – Greg Sturgess (SMEC)**
- **Project Manager – Hugh Bannister (IES)**
- **Model Computer Specialist – Ken Stocks (IES)**
- **Energy Policy Advisors – P J Perera, Jinlong Ma (SMEC)**
- **Manager, Australian Host Organisation – Linda Murdoch (IES)**
- **ABARE Advisor/Reviewer – Andrew Dickson (ABARE)**
- **Project Administrator – Gina Fenner (SMEC)**



Project Components

- **Component 1 – National Energy Sector Analysis Team Development**
- **Component 2 – Regional Energy Sector Policy Linkages Development**
- **Component 3 – Regional Grid Interconnection Pre-feasibility Study (optional – to be decided)**
- **Component 4 – Project Management**



Project Activities

- **Initiation**
 - Establish National Project Teams
 - Establish National Co-ordinating Committees
 - Establish Policy Co-ordinating Committee
 - Mobilise Australian Managing Contractor and country/ASEAN briefings
- **Training**
 - Basic formal training in MARKAL
 - Advanced formal training in MARKAL
 - Basic LP course
 - “On the job” training
- **Build national and regional MARKAL models**
 - Focus initially on a basic national model
 - After 1 year joined into a 10 country regional model at ACE
 - Progressive enhancements at both levels



Project Activities (2)

- **Conduct 3 national and regional studies over 3 years**
 - National s\topics selected by each country, with assistance and advice from AMC
 - Regional topic selected by PCC with AAMRUG advice
 - Reports to be disseminated
- **Undertake Work attachments**
 - ASEAN to Australia (34 for two weeks)
 - ASEAN to ACE (32 for 2 weeks)
 - ASEAN to ASEAN (later abandoned)
- **Initiate and conduct AAMRUG (User Group) Meetings**
 - Every 6 months
 - 5 held so far
 - Active participation still building
- **Project Management and Reporting**



First National Energy Policy Studies

- **Indonesia**
 - *“Gas Utilisation: National Gas Pipelines, Alternative Mix for Power Plants, and Demand Sectors in Indonesia”*
- **Malaysia**
 - *“Fuel Diversification – Economic and Environmental Impact of Alternative Fuel Mix Targets for Malaysia”*
- **Philippines**
 - *“Impact of Natural Gas Market Expansion”*
- **Thailand**
 - *“Removing the Subsidy on LPG and Implementing a Policy to Increase the Use of CNG in Transport”*
- **Vietnam**
 - *“The Strategy Orientation for Electricity Supply”*



Second National Energy Policy Studies

- **Indonesia**
 - *“The Future Demand for Natural Gas in Indonesian Regions with Particular Reference to the Use of CNG in Transport”*
- **Malaysia**
 - *“Cost And Environmental Impact of Renewable Energy in Malaysia”*
- **Philippines**
 - *“Promoting Renewable Energy In A Restructured Electricity Market”*
- **Thailand**
 - *“Fuel Options for Power Generation in Thailand”*
- **Vietnam**
 - *“Analysis of Power Development Strategies in Compliance with Environmental and Energy Security Issues”*



Third National Energy Policy Studies

- **Indonesia**
 - *“The Future Technologies for Power Plant in Indonesian Regions with Particular Reference to the Use of Renewable Energy and Small Scale Coal Steam Power Plant”*
- **Malaysia**
 - *“Greenhouse Gas Mitigation Options with Emphasis On Energy Efficiency and Renewable Energy Strategies”*
- **Philippines**
 - *“Increasing Renewable Energy Utilization By Full Cost Accounting Of Electricity Supply”*
- **Thailand**
 - *“Renewable Energy in Thailand”*
- **Vietnam**
 - *“Energy Pricing and its Implication for Energy Efficiency and Environment”*



CLM National Energy Policy Studies

- **CLM Project has limited funding and only one round of studies was provided for**
 - These are completed in draft and are now being reviewed
- **Cambodia**
 - *“Analysis of Power Supply Options for the Interconnected Grid”*
- **Lao PDR**
 - *“Strategies for Managing Wood Consumption in Residential Cooking”*
- **Myanmar**
 - *“Self sufficiency in Liquid Fuels – Options and Strategies”*



Regional Studies

- **Study 1**
 - *“The Trans-ASEAN Energy Network”*
 - completed
- **Study 2**
 - *“ASEAN Energy Market Integration”*
 - Being reviewed and revised
- **Study 3**
 - *“Policies and Strategies Toward Energy Trade and Sustainable Development in ASEAN”*
 - Underway



Some Regional Study Outcomes

- **Three studies to be performed**
 - each building on the previous
 - Progressive improvement in model and level of analysis
- **General conclusions**
 - Scope for further regional energy trade within ASEAN
 - Current gas and electricity interconnection strategy is sector-specific and not yet fully co-ordinated
 - Different fuel mix assumptions in energy sector
 - Generally, interconnection seems over-ambitious especially in gas when LNG options accounted for
 - Depends on national policy settings
 - Investment cost differences between countries significant and warrant further detailed investigation



Issues for Sustainability

- **Team maintenance**
 - Nationally – depends on benefits seen
 - Regionally – built around ASEAN Centre for Energy – funding???
 - CLM countries have received less training and need more
- **Ongoing training**
 - Skill levels improved but need further development
 - High team member turnover
 - Base ongoing training at ACE
 - Seek additional aid funding for CLM
- **Acceptance of approach by policymakers**
 - Policy development appears to be “top down”
 - Can analysts challenge the status quo?
- **Software**
 - Perceived as difficult to use
 - Not always reliable and sometimes inaccurate



Sustainability Strategy

- **Encourage maintenance of national teams**
 - Commitments made, but enthusiasm varies
 - Generally, teams see the tools as a useful aid for the annual revision of national energy plans
- **Build the co-ordination and analytical team at ACE**
 - Funding bey seeking commercial work/aid funding in partnership with consultant advisers?
- **Maintain AAMRUG, website, & work attachments**
 - Build relationship with ETSAP
- **Work to embed the approach into policy-making processes**
 - Nationally and in ASEAN forums



Conclusions

- **EPSAP project has been a major exercise in national and regional capacity building | ASEAN**
- **Project generally on track after 3 years, with 6 months to go**
 - Final policy reports underway and being finalised
 - Sustainability Issues being addressed
- **Skill levels have seen progressive improvement**
 - Later studies/reports done with less AMC assistance
 - Improvements in policy analysis focus
- **Sustainability is the challenge**
 - Acceptance by national and regional policymakers
 - Funding, especially regional