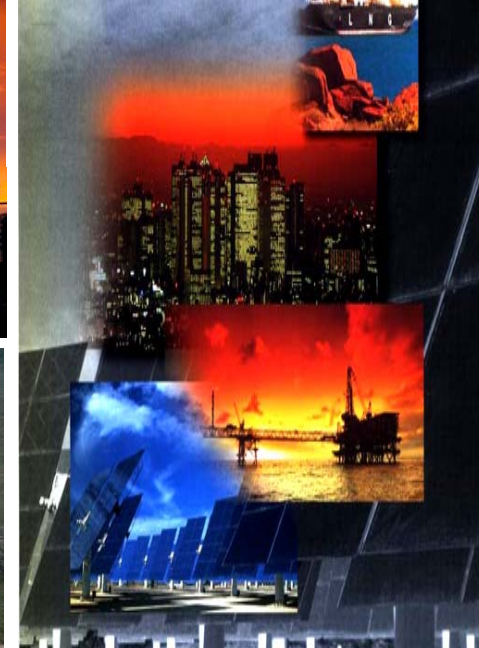
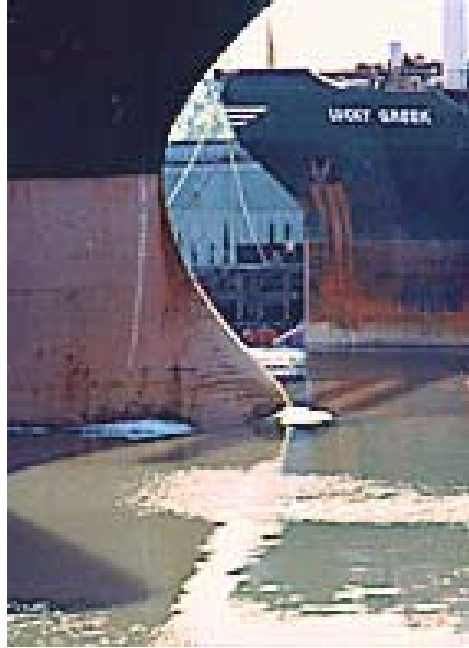




Asia-Pacific  
Economic Cooperation

Asia Pacific Energy  
Research Centre



# APEC: A Quest for Energy Security in the 21<sup>st</sup> Century—Resources and Constraints

## **EWG32 Sakhalinsk, Russia**

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# Outline

- ***Objective***
- ***Scope of the study***
- ***Methodology***
- ***Preliminary findings***
- ***Next steps***



# Objective

**To provide APEC economies with options for the enhancement of energy security and sustainable development.**



# Scope of the study

## ***1. Evaluation of resources and energy security***

- ***Current status & impacts of energy resources constraints (conventional & non-conventional sources)***

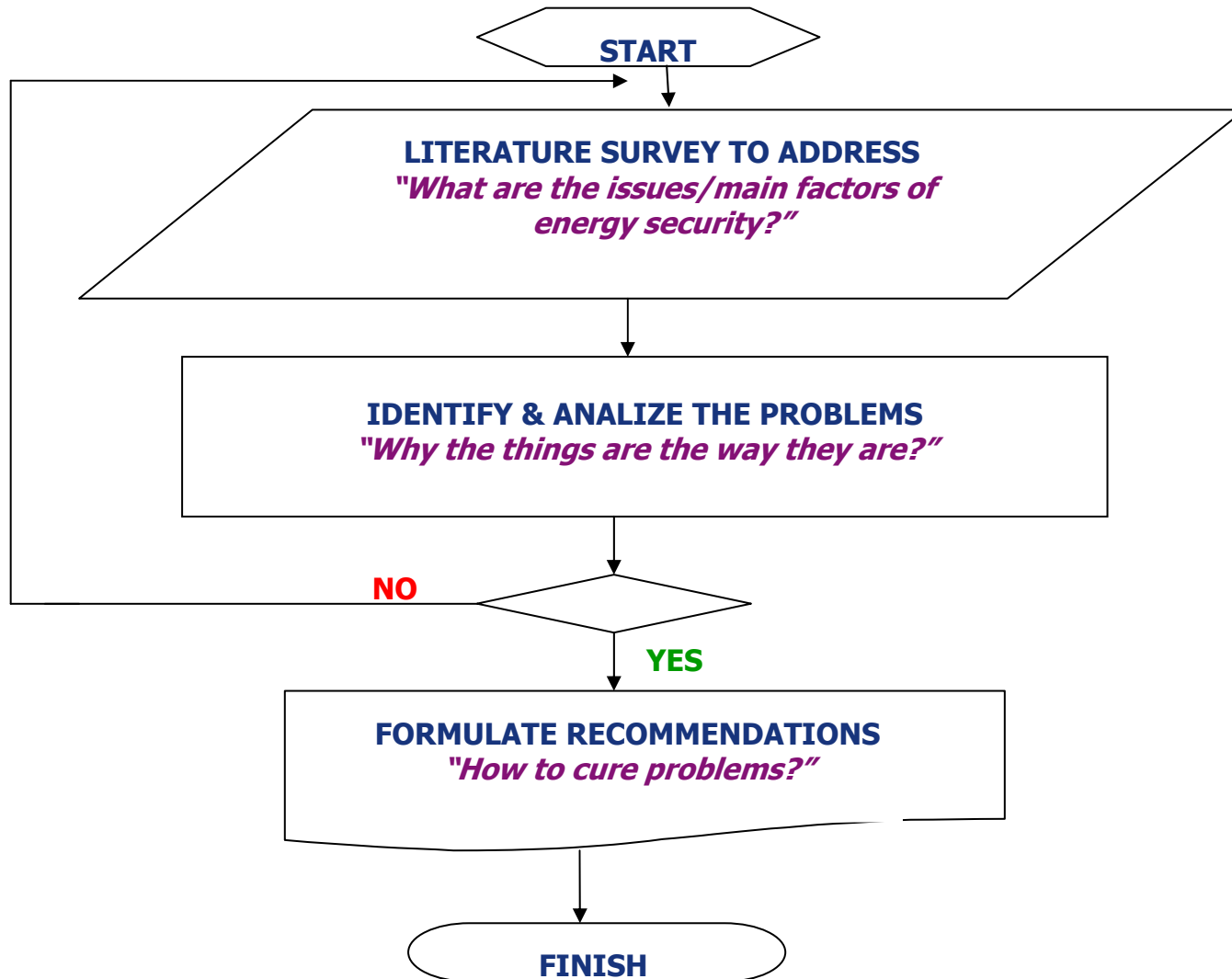
## ***2. Analysis for potential of alternative fuels substitution and energy security***

- ***Electricity***
- ***Transportation***
- ***Industrial***
- ***Res & Com***

## ***3. Managing the resource for energy security***



# Methodology





## Preliminary findings

- ***Tentative findings for energy development in the 21st century is delineated as follow:***
  - ***Oil production peak is not considered as a serious threat in the near to middle term but sometimes in this century.***
  - ***Natural gas production will follow the same track as oil even though gas peak has not yet become imminent threat.***
  - ***No shortage of coal, and will play a bigger role with clean coal, CCS technologies in electricity generation; and CTL in transportation.***
  - ***Unconventional oil, coal bed methane, methane hydrate will become more economic with technology development.***



# Preliminary findings

- ***Tentative findings (Continue)***
  - ***Fossil fuels continuing predominate in the next 20-40 years due to the inertia of existing energy infrastructure.***
  - ***Nuclear energy with new reactor design will be introduced to stabilize the concentration of CO<sub>2</sub> sometimes before 2050.***
  - ***Renewable energy will have a bigger share in electricity market.***
  - ***The development of energy efficiency technology plays an important part in cutting the energy consumption.***



# Preliminary findings

- ***Major constraints:***
  - ***Resources;***
    - ***Lack of investment to add new capacity***
    - ***Availability of supply; peak, depletion***
    - ***Volatility of supply; political threats, wars***
  - ***Tighten environment regulations***
  - ***High technology cost***
  - ***Regulatory & policy;***
    - ***Subsidy***
    - ***Knowledge***
  - ***Financial***





## Next steps

***Analysis will be performed proactively on the major constraints identified and suitable implications will be formulated.***



**THANK YOU**  
For your attention