

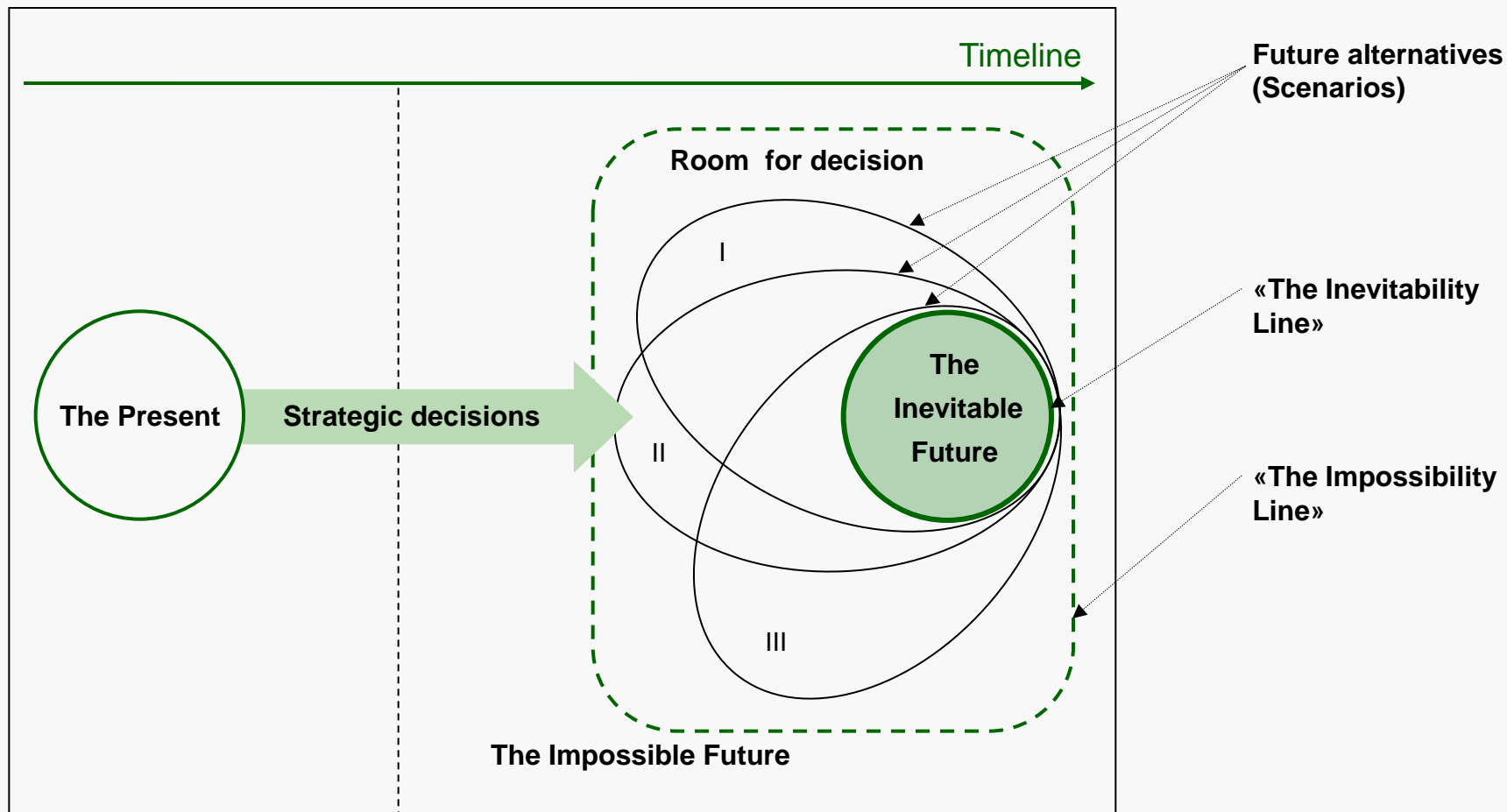
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Member of the Board
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Looking Beyond the Horizon

WORKSHOP

“Development of Electricity Market and Strengthening
of Electricity Grid in the High North Region”

February 28, 2013



- **Problem** – is a state of affairs when actual results of our actions (calculations, implementation of business processes, plans or strategies, etc.) fail to match the expected results.
 - *Problem is associated with an already existing algorithm or process and, even more, with a formalized description of expected results (reference calculations, statistical compilations, agreed parameters, etc.) compared against the current state of affairs. This is the only case we may claim that «We have a problem!».*
- When the expected result is the only firm thing that we have and absent other options (input data, clear limitations or solution approaches), we'd rather say:
«We have a task to solve within the specified timeframe!».

Asian Phoenix

The scenario addresses political, economic and energy-related influence of Asia's gaining the greatest share in the global GDP.

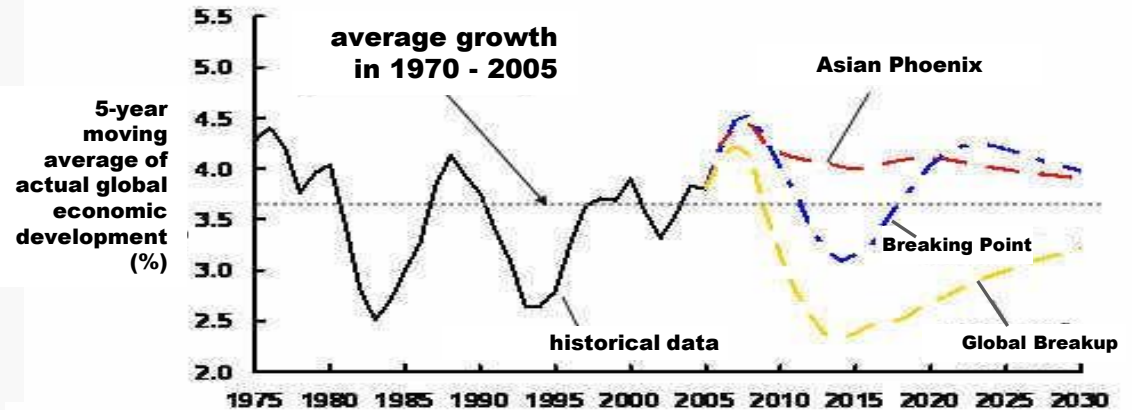
Breaking Point

This scenario presumes that oil may lose its monopoly position in transport sector. It also considers the impact of restrictions on CO₂ emissions.

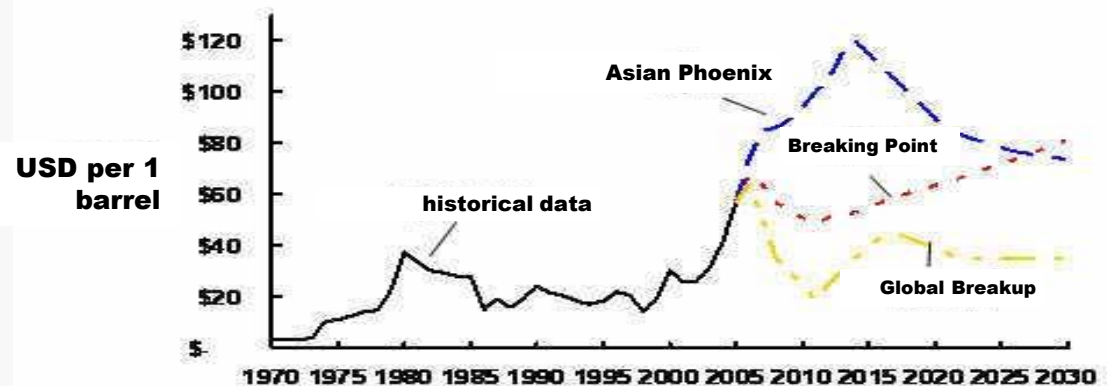
Global Breakup

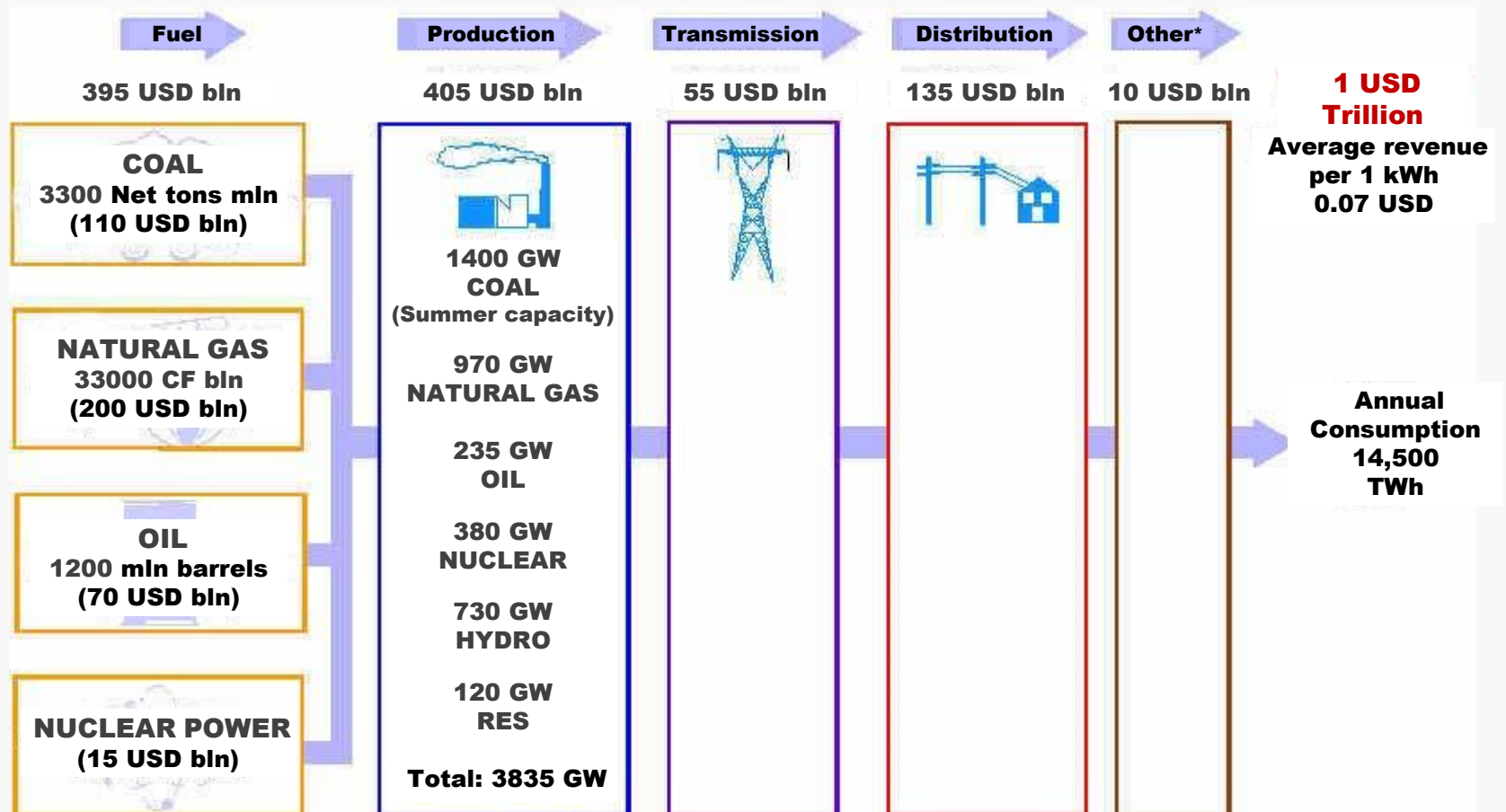
This is the scenario where anti-globalization movement results in weaker global economy and massive problems in energy sector.

Actual global economic development: 1970 - 2030



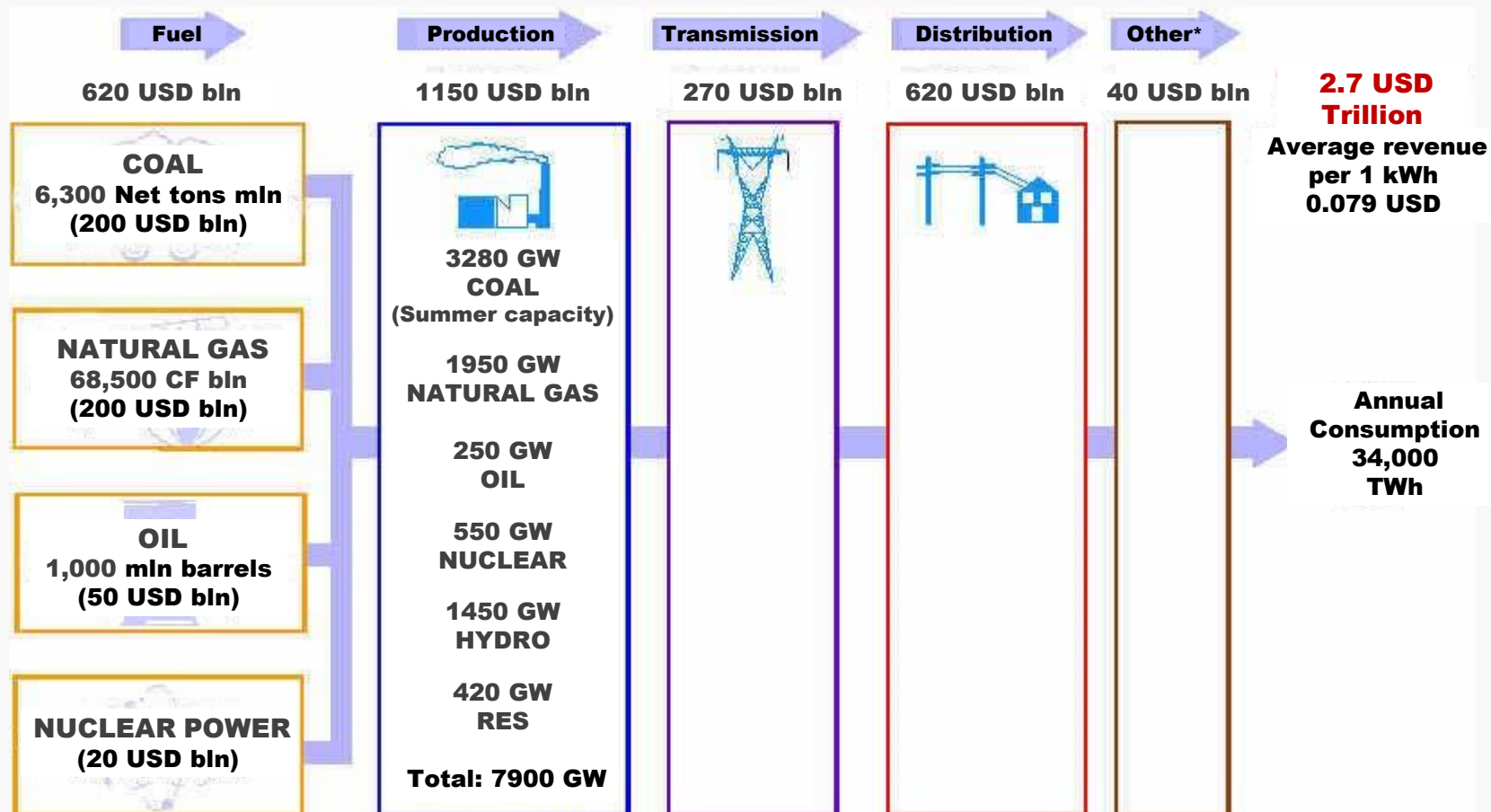
Prices for light sweet crude oil, nominal values





Source: Cambridge Energy Research Associates

* Including trade



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The current level of conveniences (lighting, hot water supply, electric power supply, transport, communications, etc.) – **is out of question!**

Growing demand for electric and heat power – **without harmful emissions, at lowest price, etc.!**

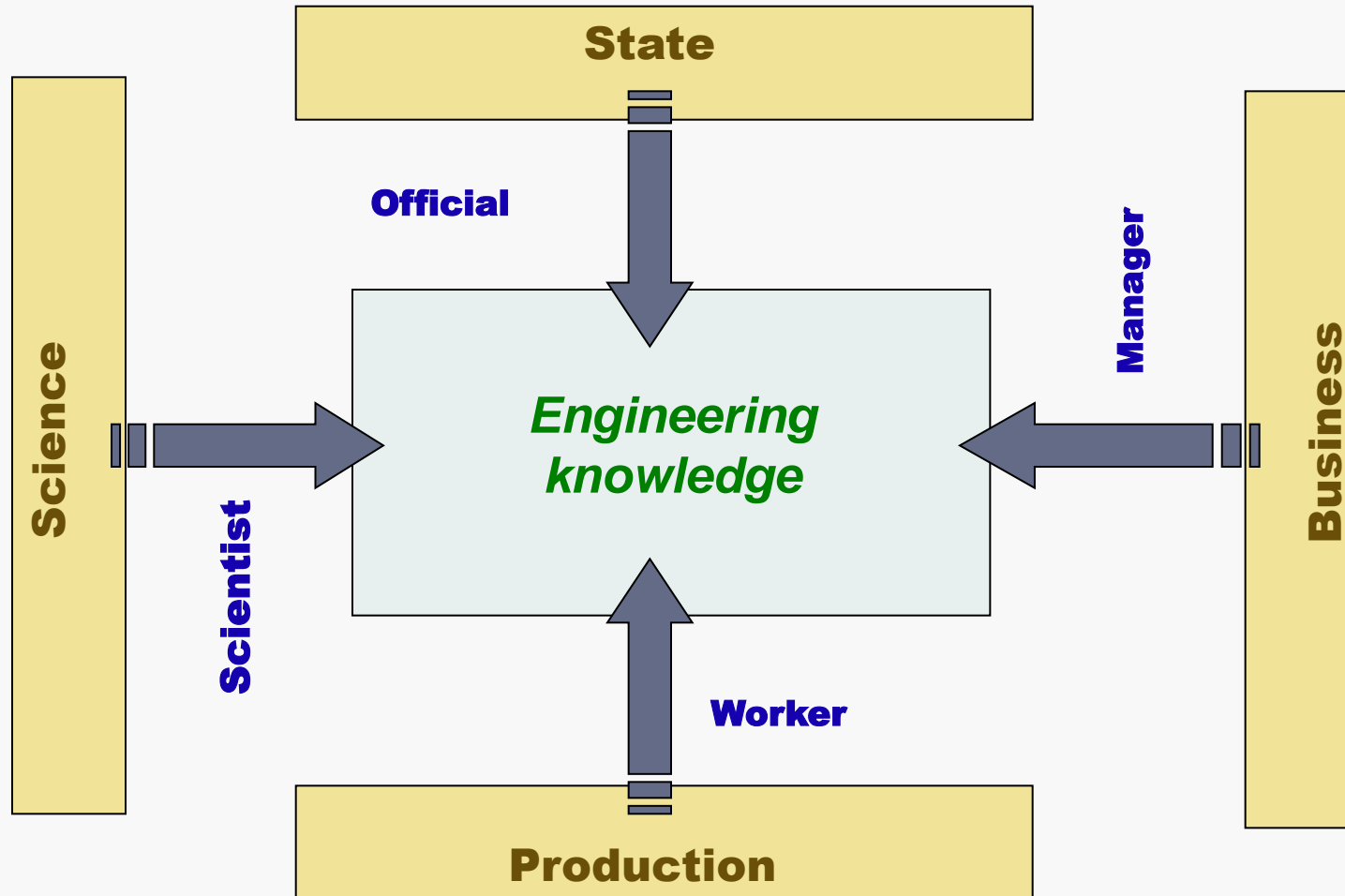
Nuclear power industry – **it'd better be terminated and as soon as possible!**

Renewable energy sources – **with pleasure, subject to state support!**



Ageing of equipment and infrastructure in general – **solution is not yet obvious!**

HR deficit (designers, engineers, manufacturing engineers, etc.) – **solution is not yet obvious!**



There are about 30 geographic zones in Russia where basic mineral deposits are localized.

Major electric and heat power consumption is concentrated in a limited number of compact zones (100 – 120) (industrial centers).

Today we have specified statistical data regarding the electric power consumption distribution among nodes of the calculation model within Unified Energy System of Russia – almost down to 110 KW substations. And it is roughly 6000 nodes!

Industrial nodes may be identified in terms of basic factors affecting the consumption profiles.

There is plenty of data according to plans of holding companies and industrial groups concerning their business development, with reliable localization.

THANK YOU
FOR YOUR ATTENTION!

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