Leveraging non-renewable energy sources for robust long-term growth:

Policy options and strategies - lessons and experience from other countries

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Aim of presentation

- Analyse **why** some petroleum producing countries have succeeded and others have failed to build sustainable societies.
- Assess the **risks and opportunities** for petroleum producing states in a low carbon energy system.

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Structure

1.The resource curse and the concept of «good governance»

2. Seven policy challenges to get right

3. Risks and opportunities of a low carbon world

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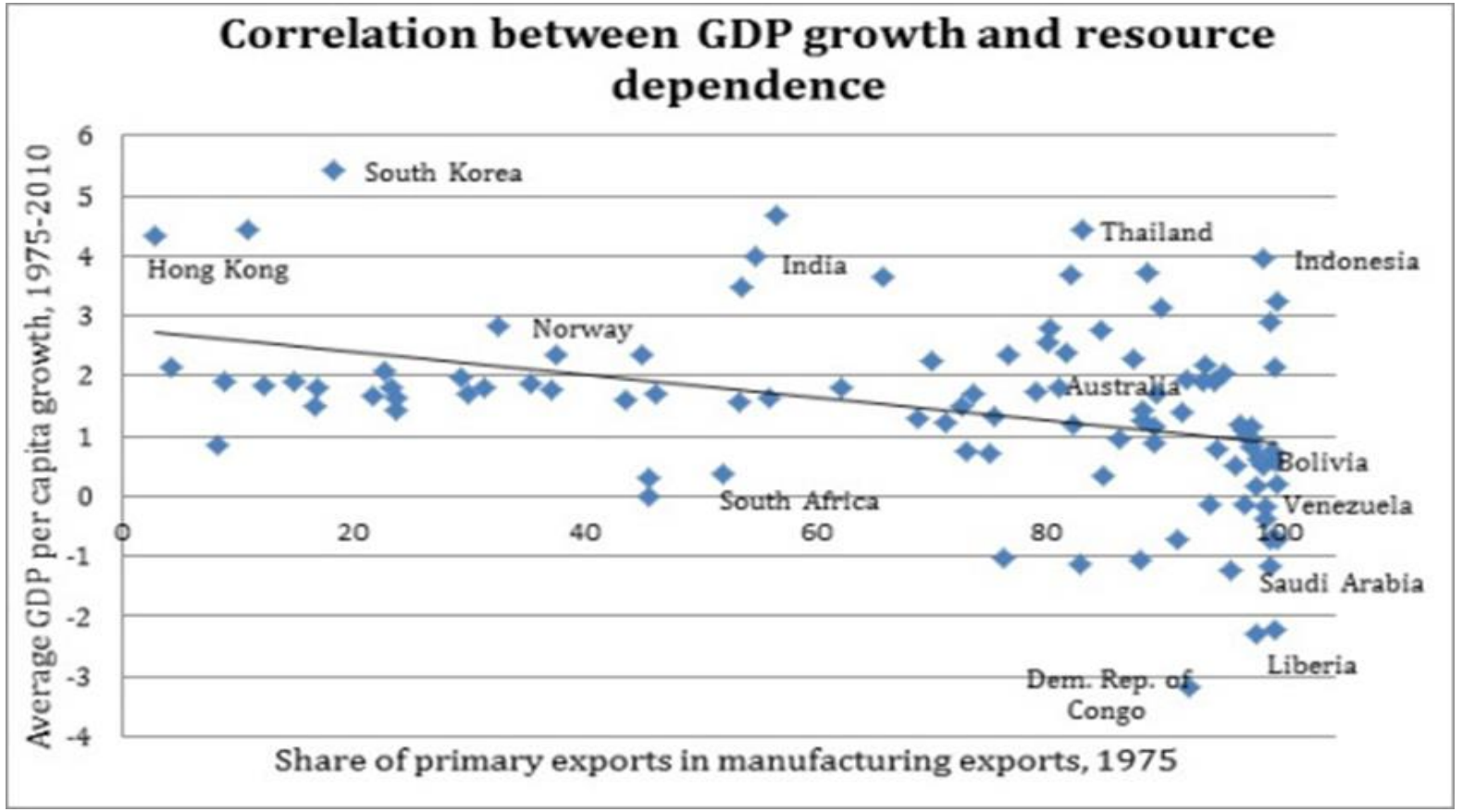
The «resource curse»



Definition of «the resource curse»

- Also known as the **paradox of plenty**:
  - *countries with an abundance of natural resources (like fossil fuels and certain minerals), tend to have less economic growth, less democracy, and worse development outcomes than countries with fewer natural resources*

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The meaning of «resource curse» has changed over time

Originally: A general concept with primarily an economic explanation (such as *Dutch Disease*)

«It is all about govenance»

Today: Decompose the problem and address a number of «sub-topics» primarily related to governance

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Governance

Definition: *The process of decision-making and the process by which decisions are implemented*

- Government with **clarity of goals, roles and responsibilities.** Sound policies must be in place
- Capacity and skills to manage government policies via **strong institutions**
- **Transparency** in the management of the petroleum sector, so that the public, including civil society, can hold authorities accountable
- Presupposes a **fair legal** and **regulatory system** with high **legitimacy**

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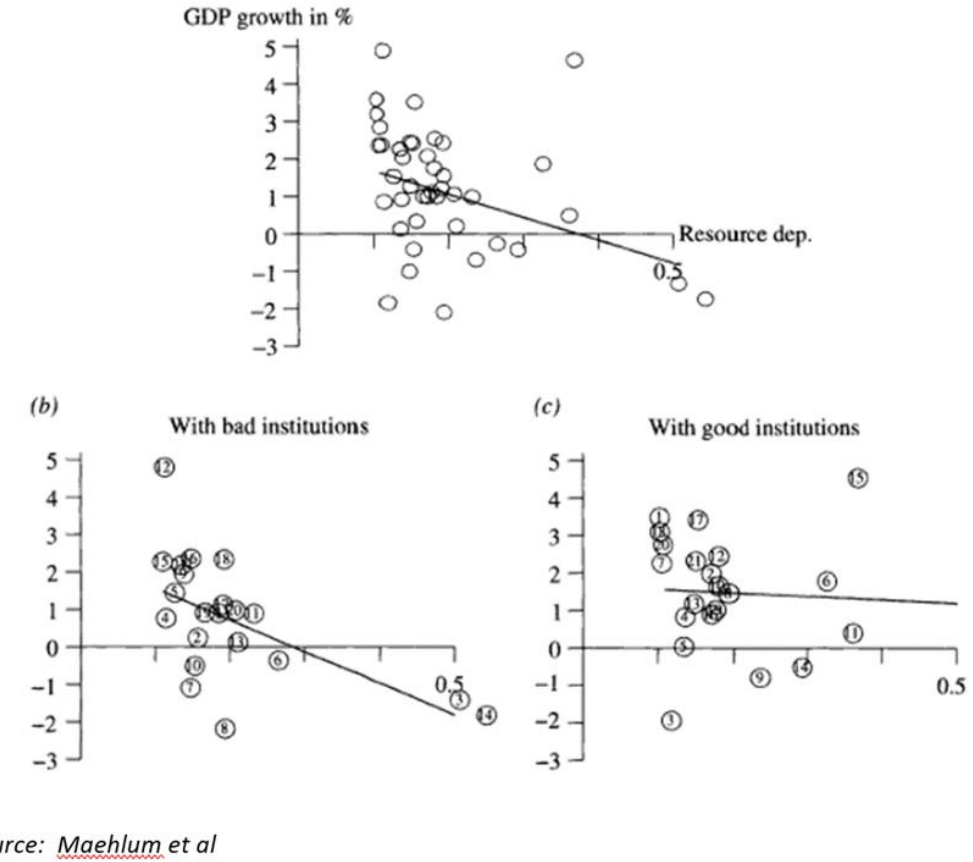
1. Build competent and accountable institutions

- National Directorates, Environmental Agencies, Ministries to implement policies
- <u>But:</u>
- It takes a long time to build institutions (**Mozambique**)
- Once formed, they must also be used (**Ukraine**)
- Different institutions in different countries (**Fukhiyama**)



Source: Maehlum et al

Countries performing well across the six areas of the resources value chain

	Develop resources		Capture value		Transform value into long-term development	
	Institutions and governance	Infrastructure	Fiscal policy and competitiveness[1]	Local content development	Spending the windfall	Economic development
1	Norway	Canada	Canada	Canada	Norway	Norway
2	Canada	Malaysia	Chile	Norway	Australia	Qatar
3	Australia	Norway	Norway	Qatar	Canada	Australia
4	UAE[2]	Australia	Botswana	UAE[2]	Bahrain	Iceland
5	Chile	Lithuania	Mexico	Australia	Brazil	Canada
6	Iceland	Saudi Arabia	Australia	Iceland	Kuwait	UAE[2]
7	Qatar	Namibia	Bulgaria	Malaysia	Botswana	Israel
8	Brunei Darussalam	UAE[2]	Peru	South Africa	Colombia	Bahrain
9	Oman	Iceland	Brazil	Lithuania	Chile	Brunei Darussalam
10	Brazil	Azerbaijan	Colombia	Guatemala	South Africa	Chile

1 Analysis restricted to mining sectors due to data availability and comparability issues. The analysis is based on country risk, access to skills, regulatory duplication, and taxation. The assessment excludes other aspects of competitiveness, such as energy and wage costs, and other regulatory barriers.
2 United Arab Emirates.
NOTE: Based on a variety of publicly available sources of information. See the appendix for further details on the methodology.
SOURCE: Revenue Watch; World Economic Forum; World Bank; United Nations Educational, Scientific and Cultural Organization; UN Human Development Report; Yale Environmental Performance Index; Fraser Institute; Morningstar; International Monetary Fund; International Budget Partnership; McKinsey Global Institute analysis

2. National Oil Companies are potentially useful instrumets. Must not become «states within states»

- NOCs play **key positions** in producer states
- Important to **decide** what NOC **shall/shall not do**
- **Complicated «governance systems»** (commercial and political)
- **Dangers** of **large misallocation** of **capital** and **corruption**
- Varied results with efforts to control NOCs via structural changes
- **Equinor/Pertamina** two outlayers

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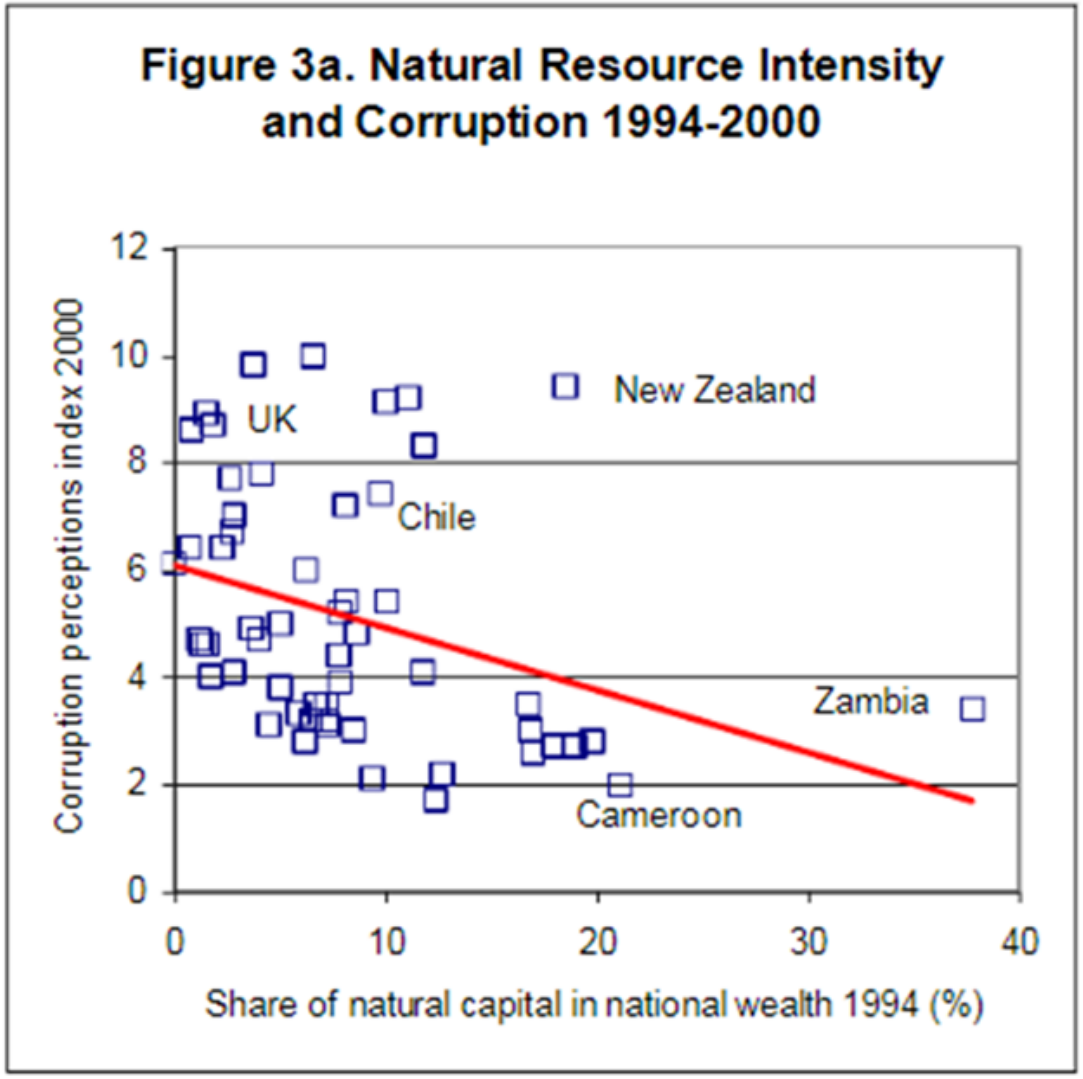
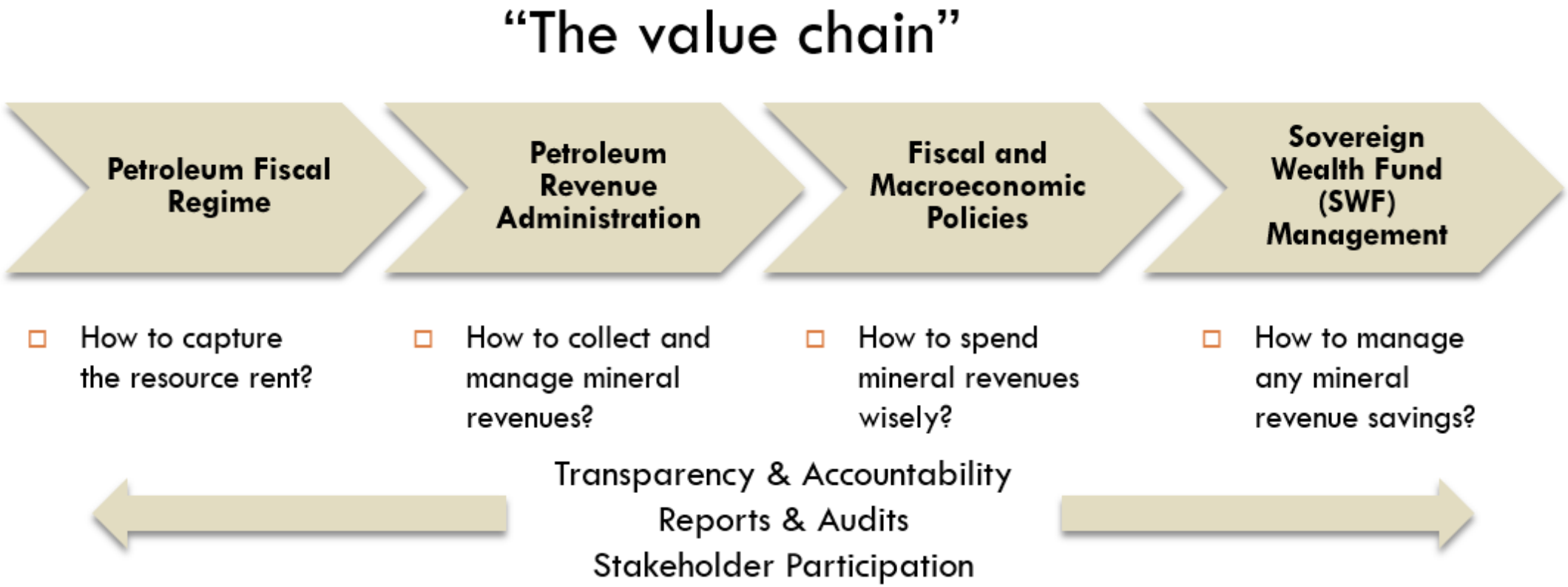
3. Resource rich countries more prone to corruption

- Large amounts of **rent coupled** with **weak governance**
- **Concentration** of revenues flow
- Technical complexities
- Transparency Intl (2021)
  - Nigeria 154/180
  - Angola 136/180
  - Namibia 58/180



4. Petroleum Revenue management



Source: Ovesen

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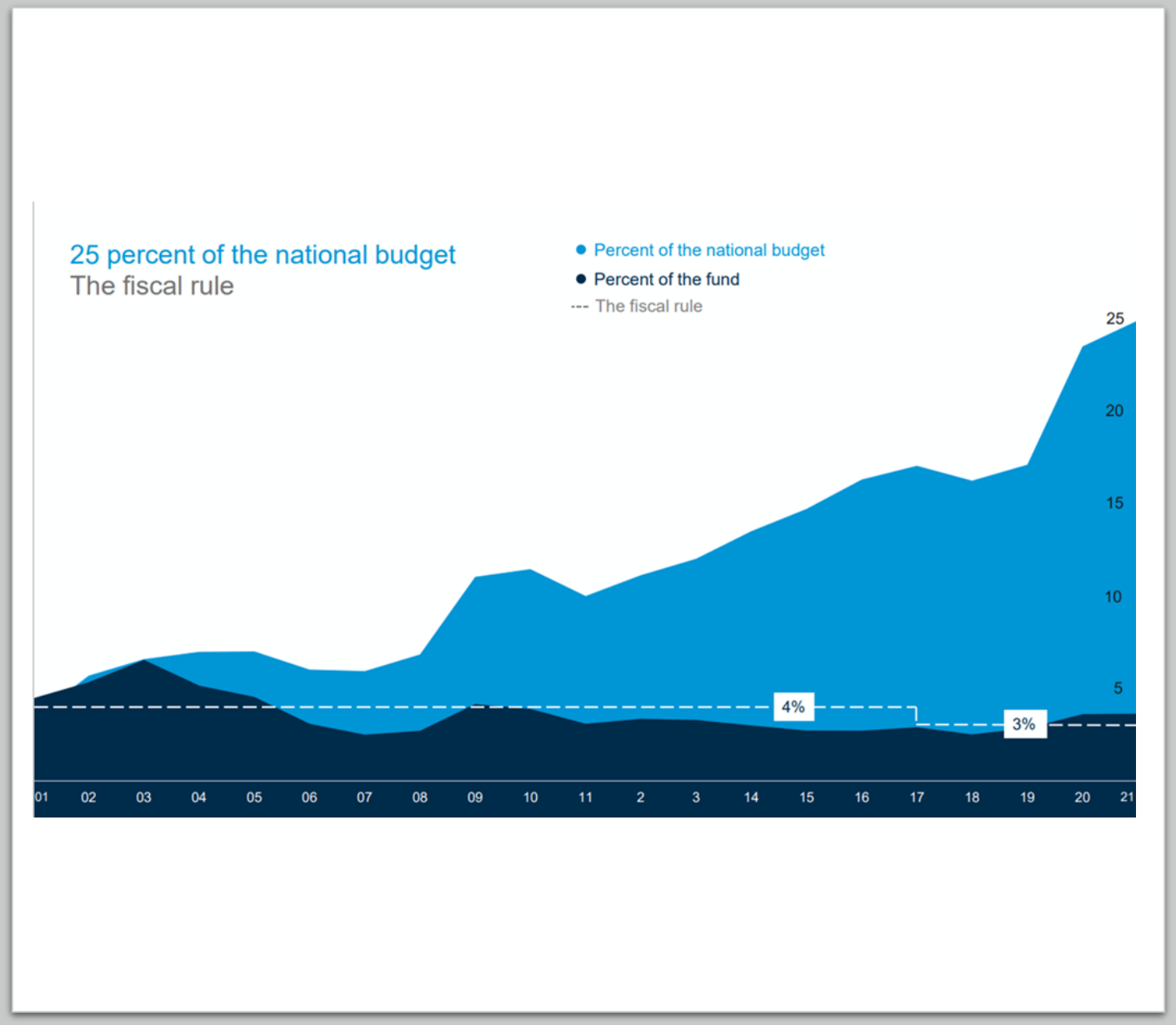
Examples of Sovereign Wealth Funds

- Timor Leste
- Mozambique
- Ghana
- Norway

  Fiscal rule key:

  Transfer annually on average 3 percent of value of the petroleum fund to government budget



5. How to maximize local value creation/industrialisation?

The principle of “prudent operation” implies:

- **Resource management** (Ghana Jubilee field)
- Maintain a high standard of **health and safety**. Operator responsibility stipulated by law
- **Control of emissions** to air, discharges to soil and sea, chemical wastes, ensure prudent handling and waste water.
- **Prohibition of flaring and venting** of gas except for safety reasons stipulated by law

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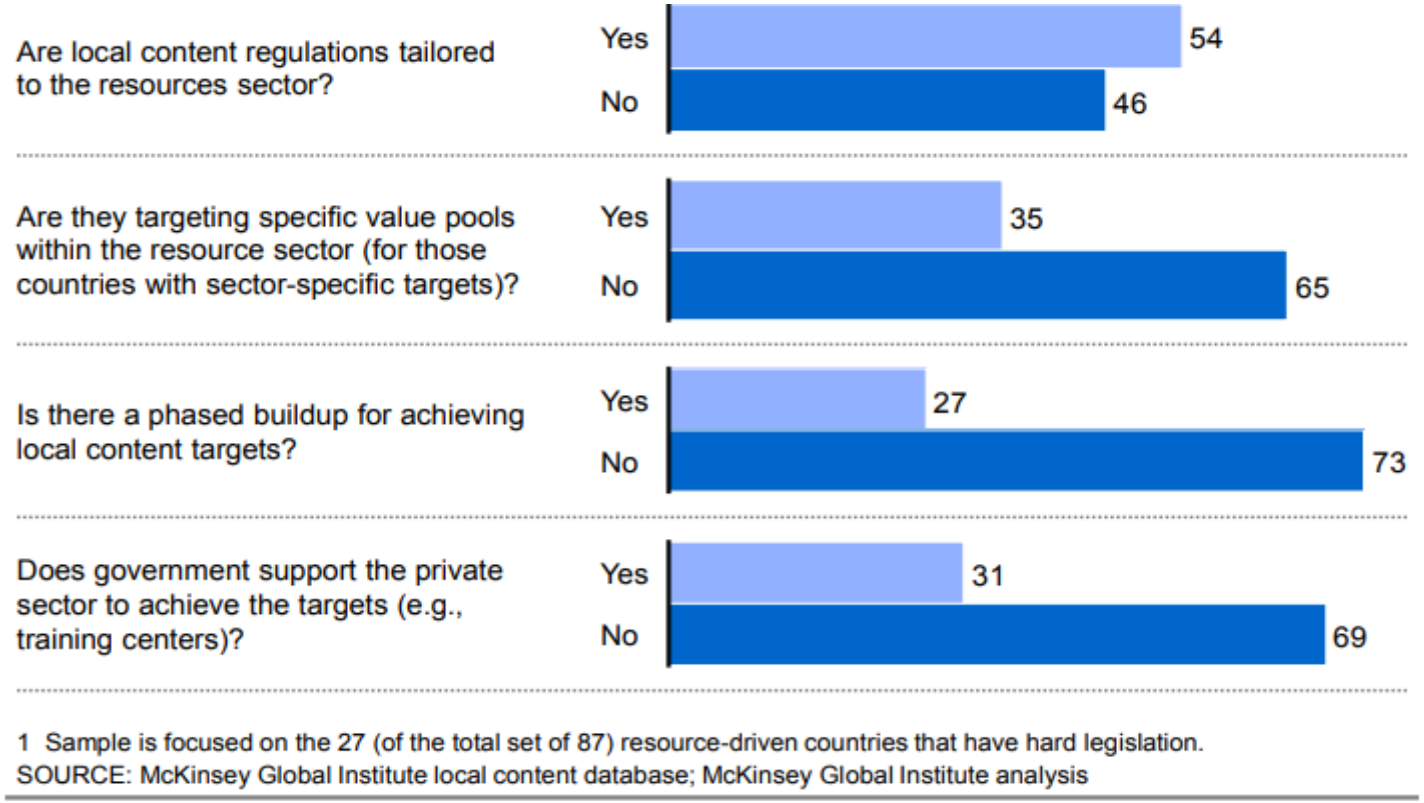
30 percent of all producer countries have «hard» local content regulations.

But often not well designed.



Cases: Russia and Uganda

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Gas for local industrialisation

- Steel and aluminum
- Desalination
- Production of ammonia /fertilizer
  - «Grey» fertilizer (Nigeria and OPC /Ethiopia)
  - Blue hydrogen/ammonia
- Gas as intermittent power

Dangote fertilizer plant (Nigeria). World's second largest urea plant with annual production 3 mill t/yr.

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6. Resource management; environmental/climate aspects; safety along the value chain

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7. Transfer knowledge and skills to producer countries through:

- **Industrialization processes**
- **Local content** policies
- **Broader knowledge-based policies** in areas like education and training, transfer of technology, job and skills creation
- Knowledge building via **universities and research institutions**
- The **international companies and supply industries** have played historically key roles

Case: Norway

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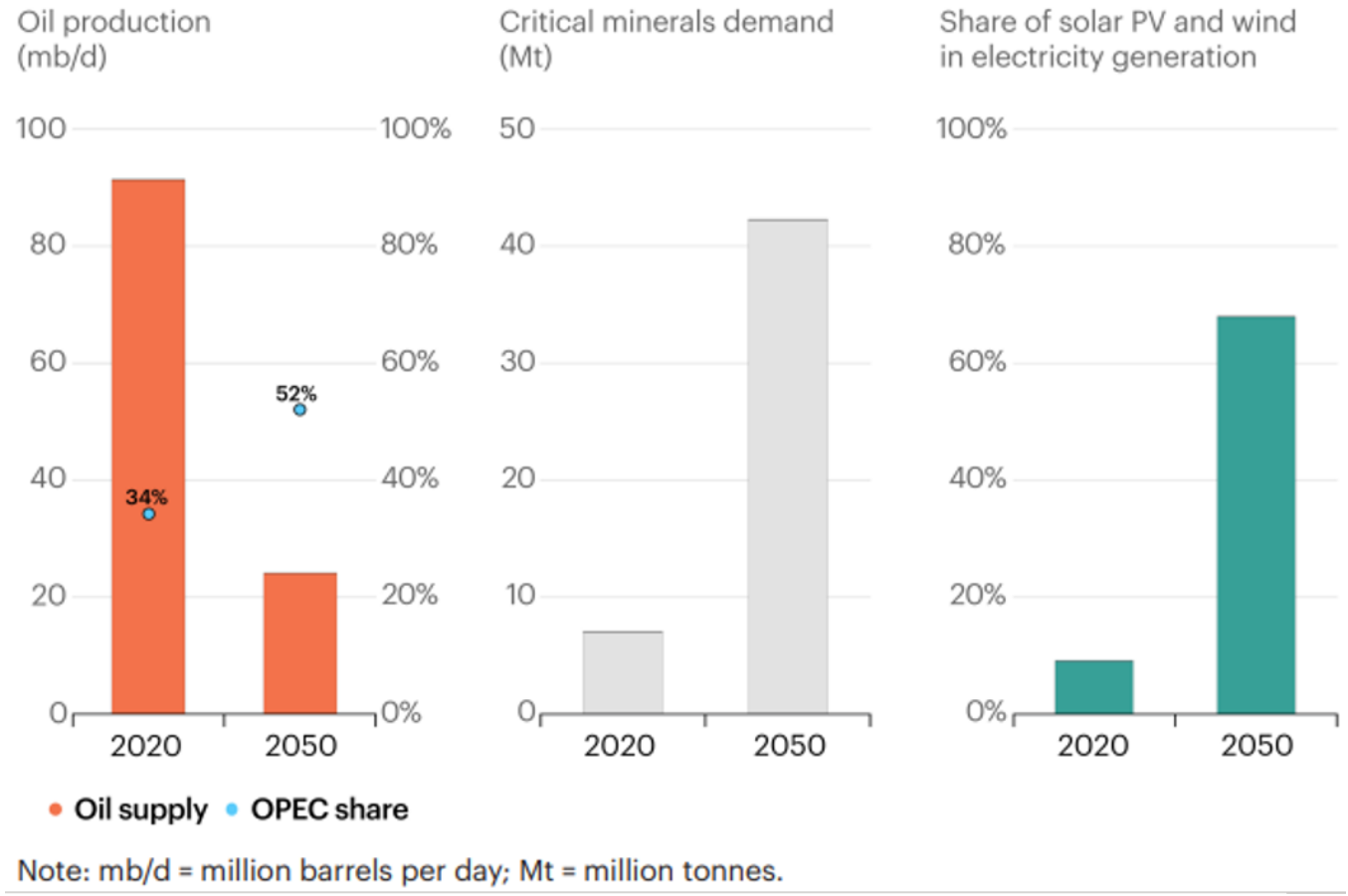
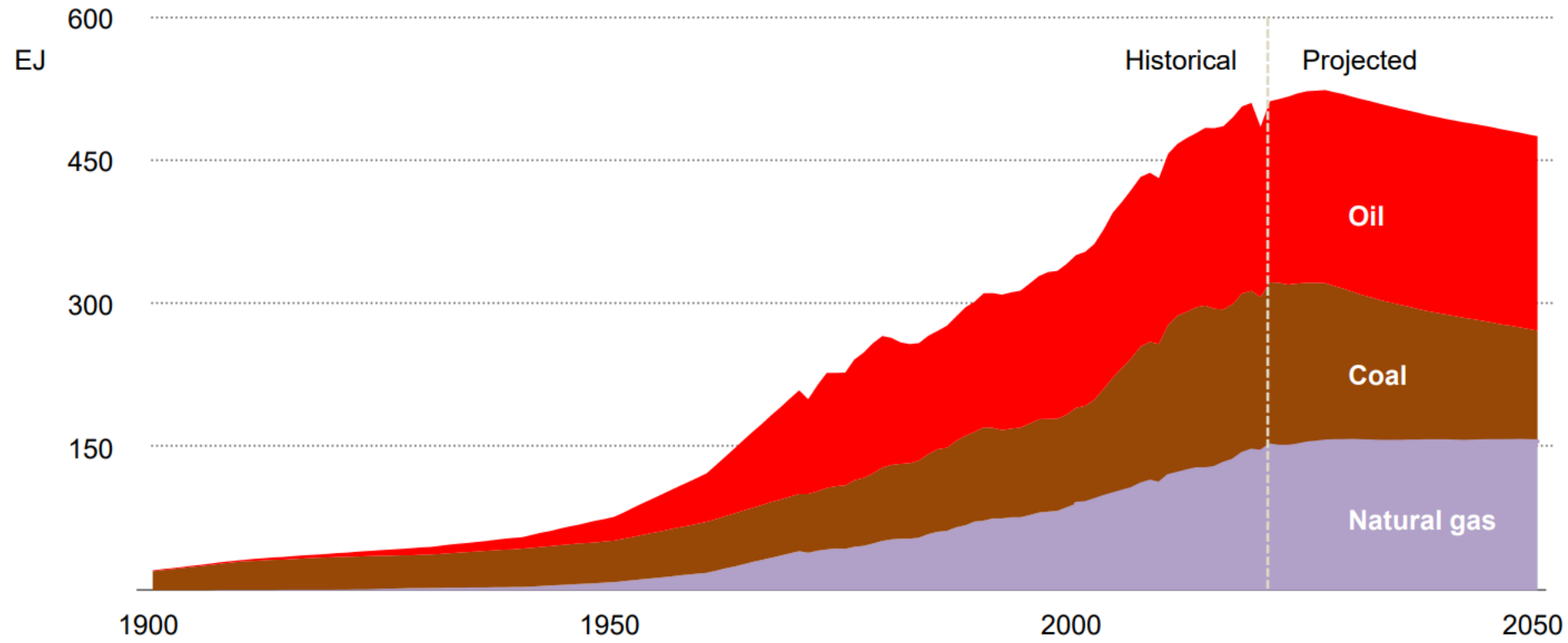
A new energy world by 2050:
Oil demand 20 percent of 2020-level



Source: IEA (NZE)

Oil and gas peak by 2030 (IEA)



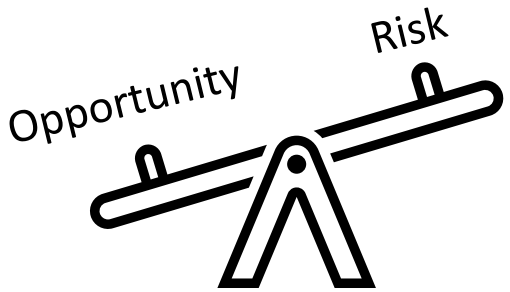
Risks stronger than opportunities for fossil producers in a low carbon world

Risks:

- «Stranded assets»
- High cost resources the last to be produced
- «Traditional» sources of capital dries up

Opportunities:

- Blue hydrogen with CCUS
- Gas for local industrialisation and intermittant power



Risks stronger than opportunities

How to meet the new risks?

1

Do not start large new oil projects

2

Diversify own portfolio. Get more energy legs (hydrogen and gas) to stand on

3

Cut production costs

4

Take mitigation-steps to reduce GHG-emissions

5

Get **companies** and not the state **to take the climate risk**

- Cut government equity commitment

Key takeaways

- The **“resource curse”** is not inevitable
- **Many hurdles** to overcome to ensure long term economic growth and economic development
- **Governance is essential:** No Resource Curse in countries where in place
- **Seven challenges** that policy makers must get right
  - Keep track of the money
  - Build knowledge
- **Risks:** The low carbon energy world introduces significant risks for new fossil projects
- **No “model” to copy -** but many examples from individual countries to learn from

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Appendix

Conclusions

- **No Resource Curse in OECD countries:** with good governance system in place
- **Mixed result in emerging economies:**
  - Malaysia, Botswana and Vietnam have done well
  - Indonesia and Russia show signs of the curse
- **Continued dependence:** Middle Eastern countries continue dependence on one commodity
- **Governance in Sub-Saharan Africa:** Angola and Nigeria have done badly. Mozambique links civil strife and the petroleum sector. Improved governance in Ghana, Senegal and Uganda.
- **A mix of fossile and low carbon projects:** Namibia, Mauritania, Morocco and Egypt

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