



From riches to rags?

Stranded Assets and the Governance Implications for the Fossil Fuel Sector

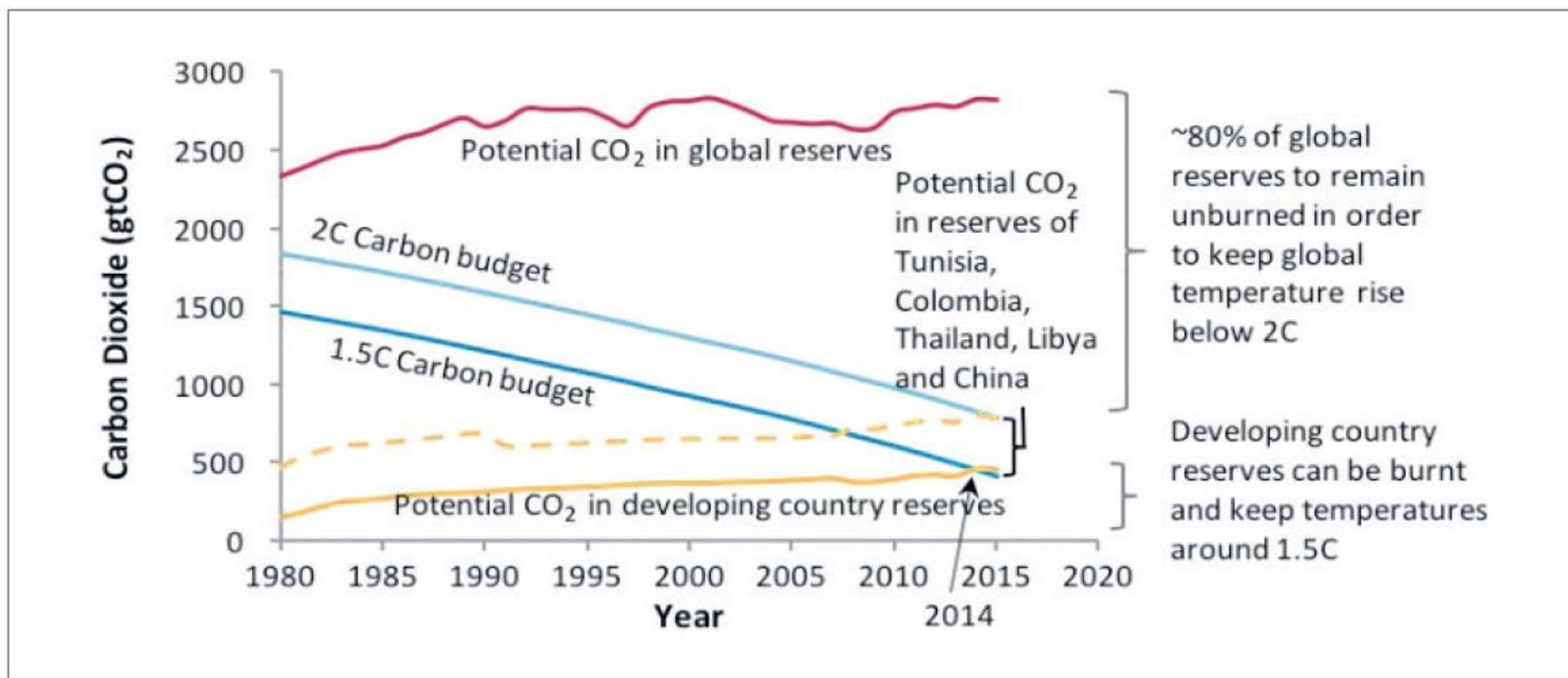
GIZ, Bonn, 8 November 2017

Stephan Wolters, adelphi

From riches to rags?

- Why do assets strand?
- Impacts on fossil fuel rich countries
- Case study
- What to do about it?
- Avenues for further research

... and it limits how much fossil fuel we can still burn.



- Close to 80% of known coal reserves (~50% of gas, 1/3-1/2 of oil) need to stay in the ground (50-66% likelihood of 2°C scenario)
- **Assumption:** Declining demand due to decarbonisation (technological progress & climate governance) -> leads to declining prices & extraction rates

For some economies, fossil fuel revenues are essential.

- Value added from natural resource rents
- Other possible indicators include
 - Export revenues
 - Government revenues

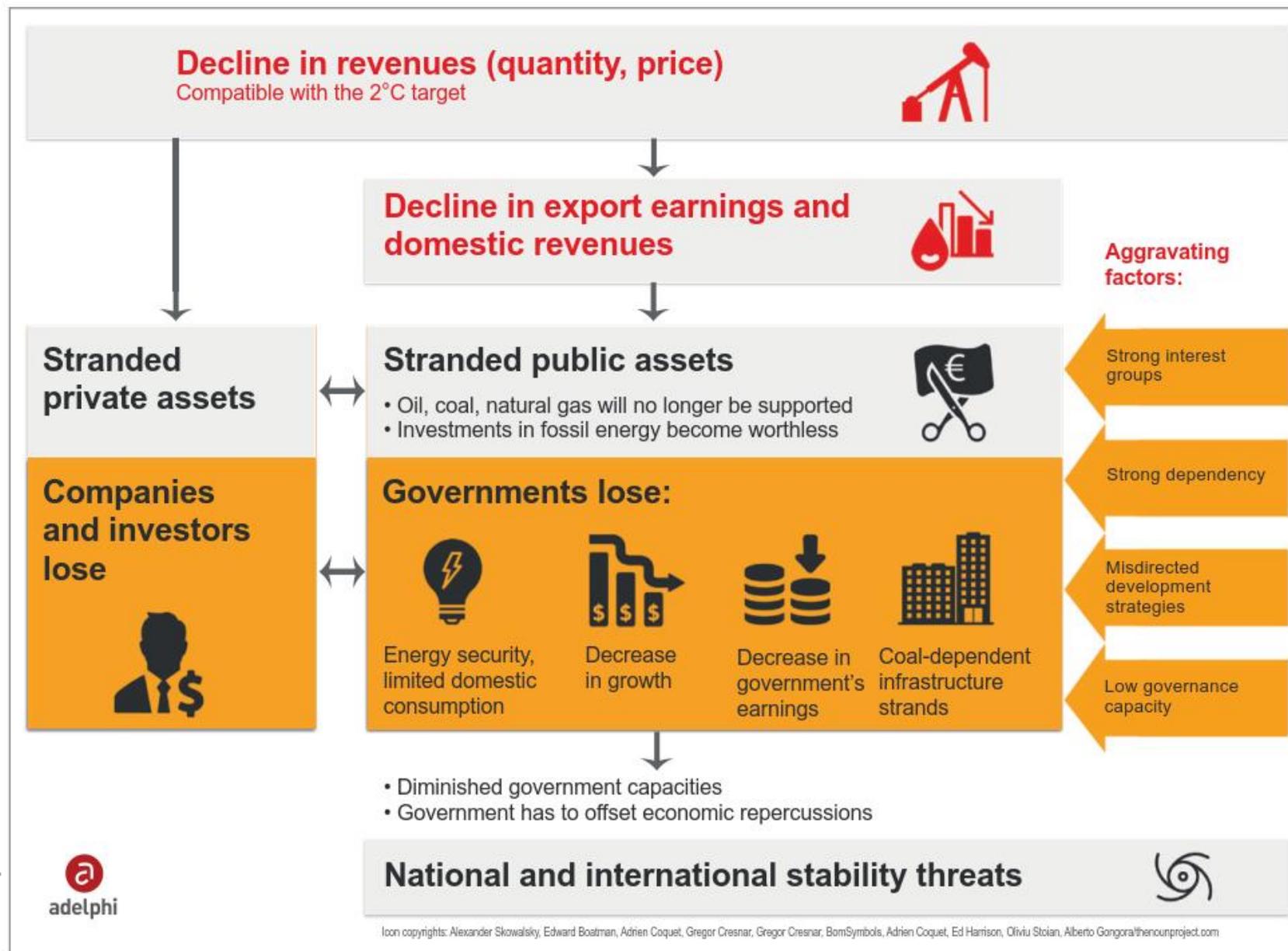
Country	Oil, natural gas and coal rents (% of GDP 2015)
Libya	50.7
Kuwait	39.1
Iraq	28.6
Iran	23.5
Saudi Arabia	23.3
Oman	23.0
Turkmenistan	18.9
Republic of Congo	18.2
Equatorial Guinea	16.4
Venezuela	14.6
MENA	13.6
Azerbaijan	13.2
South Sudan	12.1
UAE	11.9
Algeria	11.7
Qatar	11.3
Angola	10.7
Gabon	10.0



From Riches to Rags? Stranded Assets and the Governance Implications for the Fossil Fuel Sector

- **Questions:**
 - What risks arise for fossil fuel producers? Focus on public sector.
 - How can governments and development cooperation reduce those risks?
- **Asset stranding is about unanticipated devaluation:** Assets that lose value, or generate new liabilities, before they reach the end of their (planned) economic life
 - Energy infrastructure has long investment horizons
 - Which resources? Which countries/markets? Which stakeholders?
 - How to deal with uncertainties – simplified: high risk vs low risk scenarios

Impacts on stakeholders if fossil fuel revenues decline and assets strand



Governments are much more exposed than investors (and it's mostly about oil)

Figure 7. Value at risk from reducing production in accordance with IEA 450 ppm and 2DS Scenarios (2015-2035)

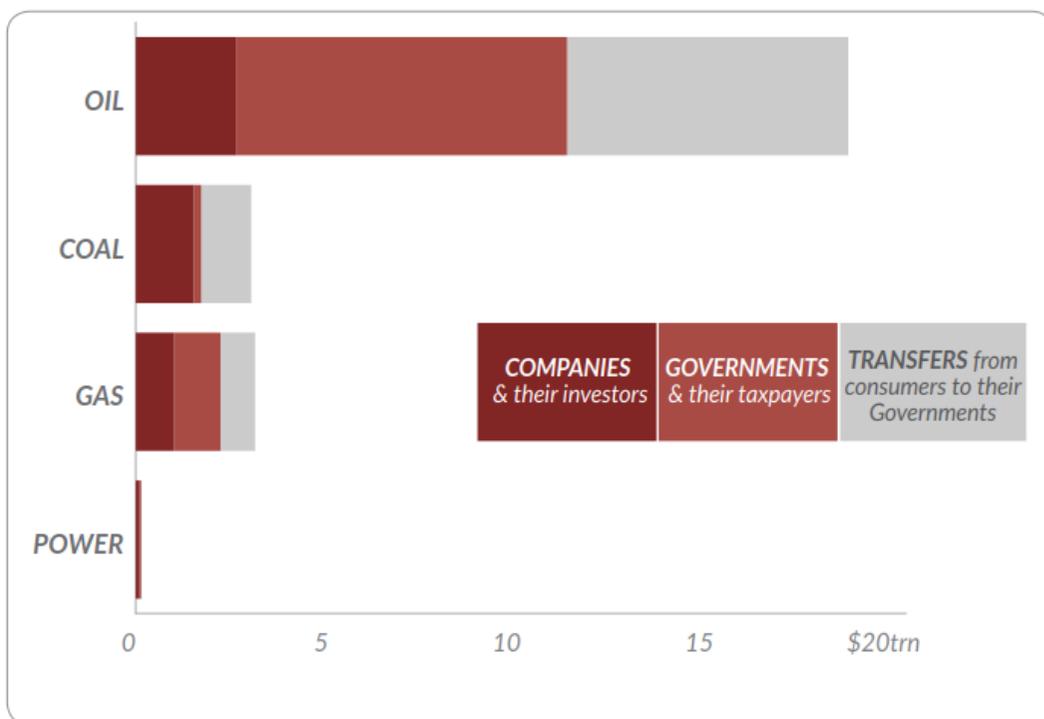
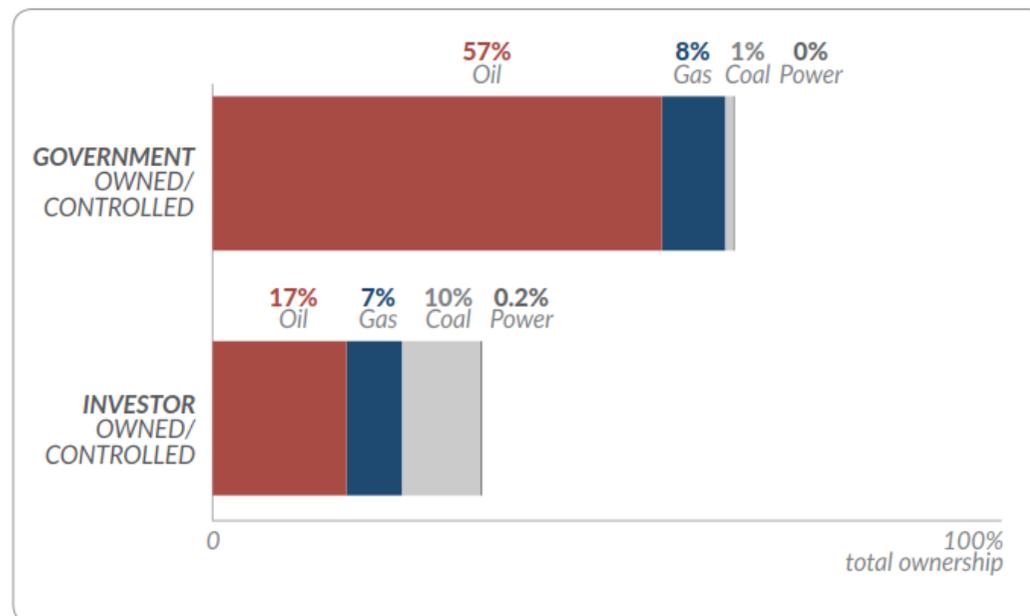
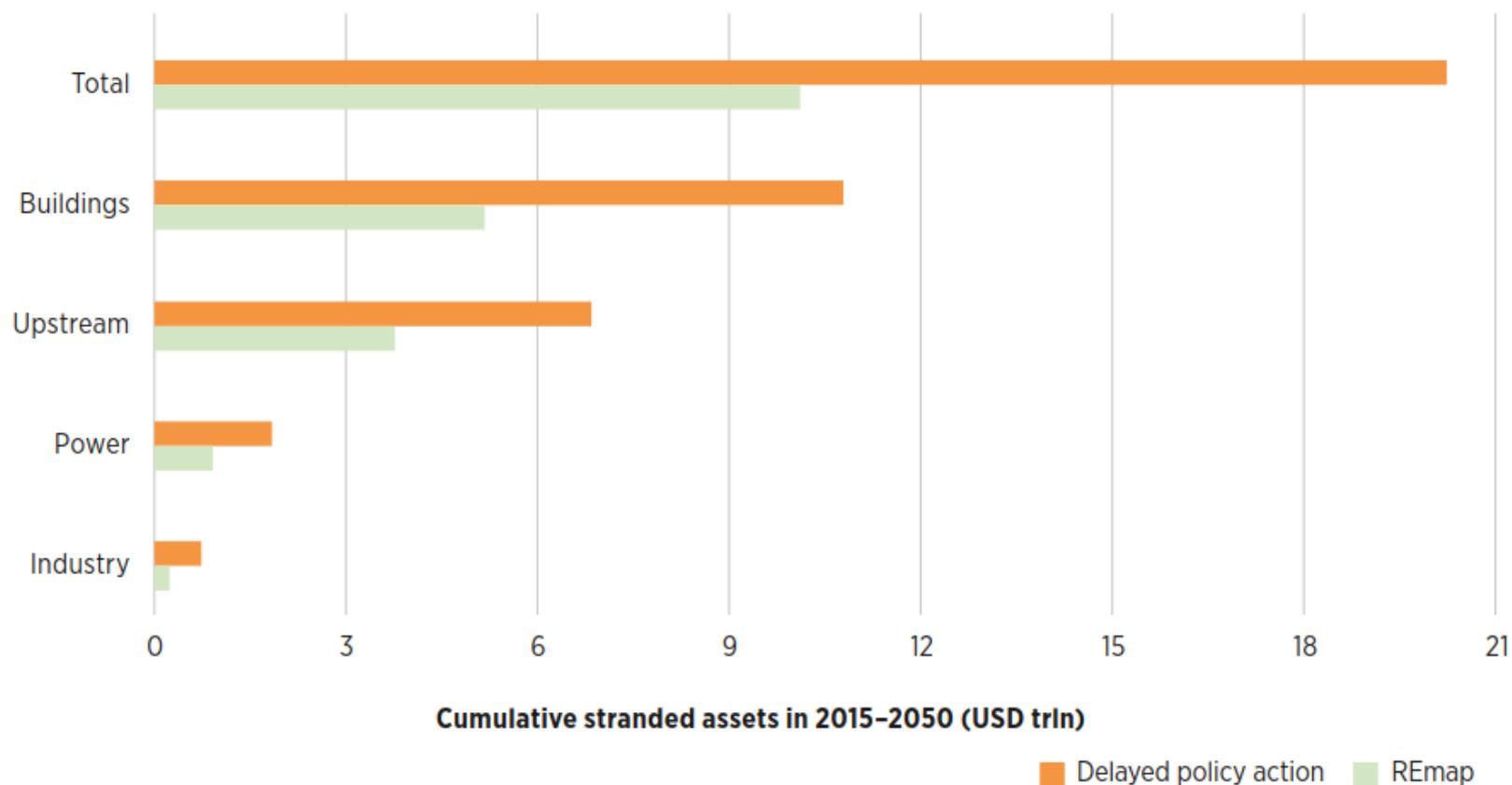


Figure 8: Split of total fossil fuel value at risk between government and private investors (excludes transfers between governments and domestic consumers)



Source: CPI – Climate Policy Initiative 2014: Moving to a Low-Carbon Economy: The Impact of Policy Pathways on Fossil Fuel Asset Values. CPI Energy Transition Series.

A lot of carbon intensive infrastructure is at risk, especially if we defer action.
Fossil fuel rich economies tend to be more carbon intensive.



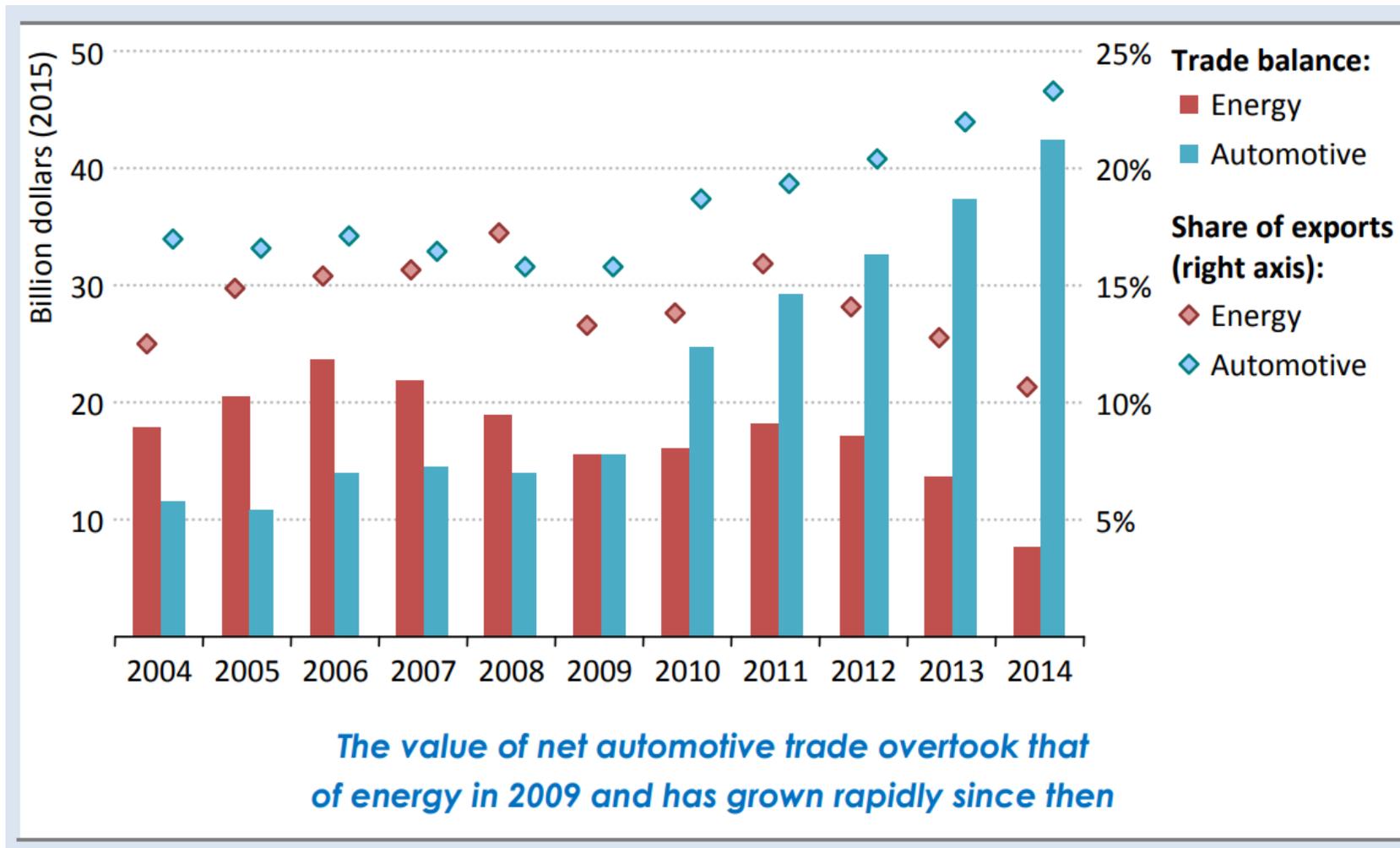
Comparison of potentially stranded assets in various sectors under an early action scenario (REmap) and a delayed policy action scenario.

Source: IRENA – International Renewable Energy Agency 2017: *Stranded assets and Renewables. How the energy transition affects the value of energy reserves, buildings and capital stock.*



Case studies: **Mexico** (and Indonesia, Mongolia, Nigeria)

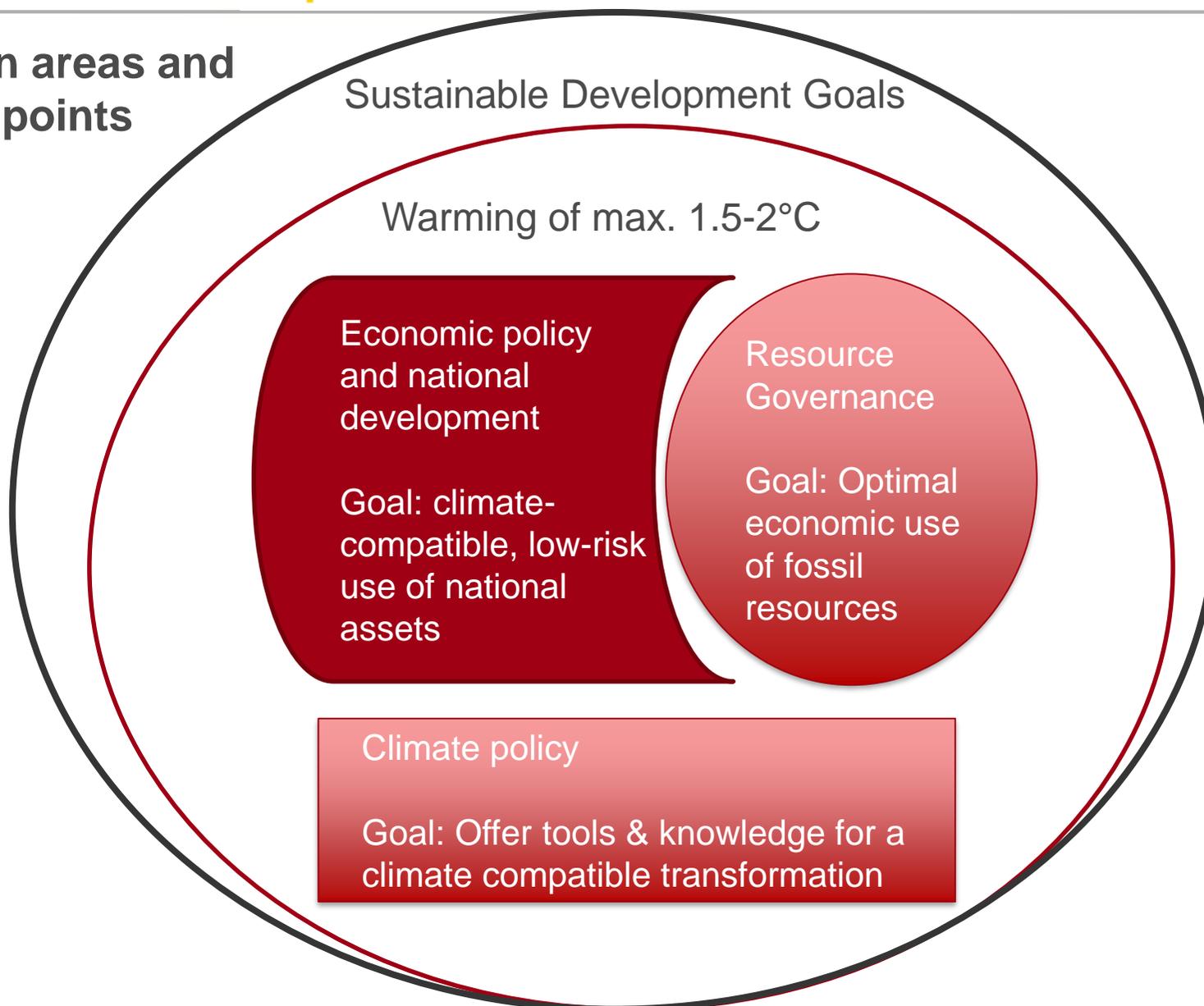
- Among the world's top 15 oil exporters, but production and revenues decline
- Annual energy consumption increase 2004-2014: 15.8%
- 93.4 billion in investments planned until 2025 'not needed' under the 450-ppm scenario (CTI 2015)
- Steps towards risk reduction:
 - Mexican exports and national revenue diversified
 - Energy reforms (e.g. PEMEX, energy prices)
 - Support of renewable energies and ambitious climate targets for a continuous transformation path
- Development of the transport sector – reason to worry: Substantially more integrated spatial planning necessary



Trade in the energy and automobile sectors in Mexico.

Source: IEA – International Energy Agency 2016b: Mexico Energy Outlook. World Energy Outlook Special Report.

Action areas and entry points



Action areas and entry points: National development and economic policy

Needs:

- Strategic vision for balanced socio-economic development
- Incorporate climate policy requirements into macroeconomic and development planning (planned transformation better than shock therapy)
- Diversify compatible with climate – away from carbon intensive sectors (vs. along the value chain)

Entry points:

- Advise on green fiscal reform – how to channel revenues into low carbon investments (e.g. fund models), and how to adequately price carbon
- Prioritize low-emission diversification in bilateral cooperation (e.g. building intangible assets like education)
- Support interministerial coordination

Action areas and entry points: Fossil fuel sector & governance

Needs

- Devise a sustainable sector strategy
- Optimal utilization of fossil resources for development needs compatible with the 2° target

Starting points

- Raise fossil fuel sector awareness of the risks of business as usual and of the need to integrate climate aspects
- Thoroughly (re-)assess plans to invest in fossil fuel extraction. Plan further development of the sector under conservative assumptions and apply shadow prices that reflect the cost of carbon.
- Provide technical support for reducing extraction-related emissions
- Build capacities and train auditors to improve revenue management and use, fostering efficacy and efficiency

Action areas and entry points: Climate policy

Needs

- Engage more actively with extractive sector
- Openly debate limits and opportunities in view of the national development goals

Starting points

- NDC processes should consider more closely fossil fuel production and financial sectors
- Provide expertise on transition and low-carbon technologies
- Support improved climate performance of the extractive sector

Action areas and entry points for international dialogue

- Tackle contradictions between climate and fossil fuel governance
- Address fairness considerations
- Consider asset stranding risks in international climate and development policy fora and processes, e.g. UNFCCC, G20, SDGs, MDBs
- Address risks through bilateral and regional initiatives
- Promote the disclosure of climate related risks in the private sector



Topics for further research and debate

- Fairness, globally: Should developing countries be allowed to extract and export fossil resources longer than industrial countries?
- How can fossil fuel reserves be incorporated in climate diplomacy? Are new compensation models for non-extraction imaginable? (Yasuni 2.0)
- What are geopolitical and stability implications of dropping revenues in fossil fuel dependent countries?
- What are opportunities for non-energetic usage of fossil resources (e.g. petrol chemistry)
- What are best practices to diversify the economy with the help of resource revenues?

Thank you!

Stephan Wolters

Senior Project Manager

wolters@adelphi.de

adelphi

Alt-Moabit 91

10559 Berlin

T +49 (0)30-89 000 68-0

F +49 (0)30-89 000 68-10

www.adelphi.de

office@adelphi.de