Main Conclusions from the Survey – the R & D Activities in ERA NET Countries Barriers & Opportunities
Part II

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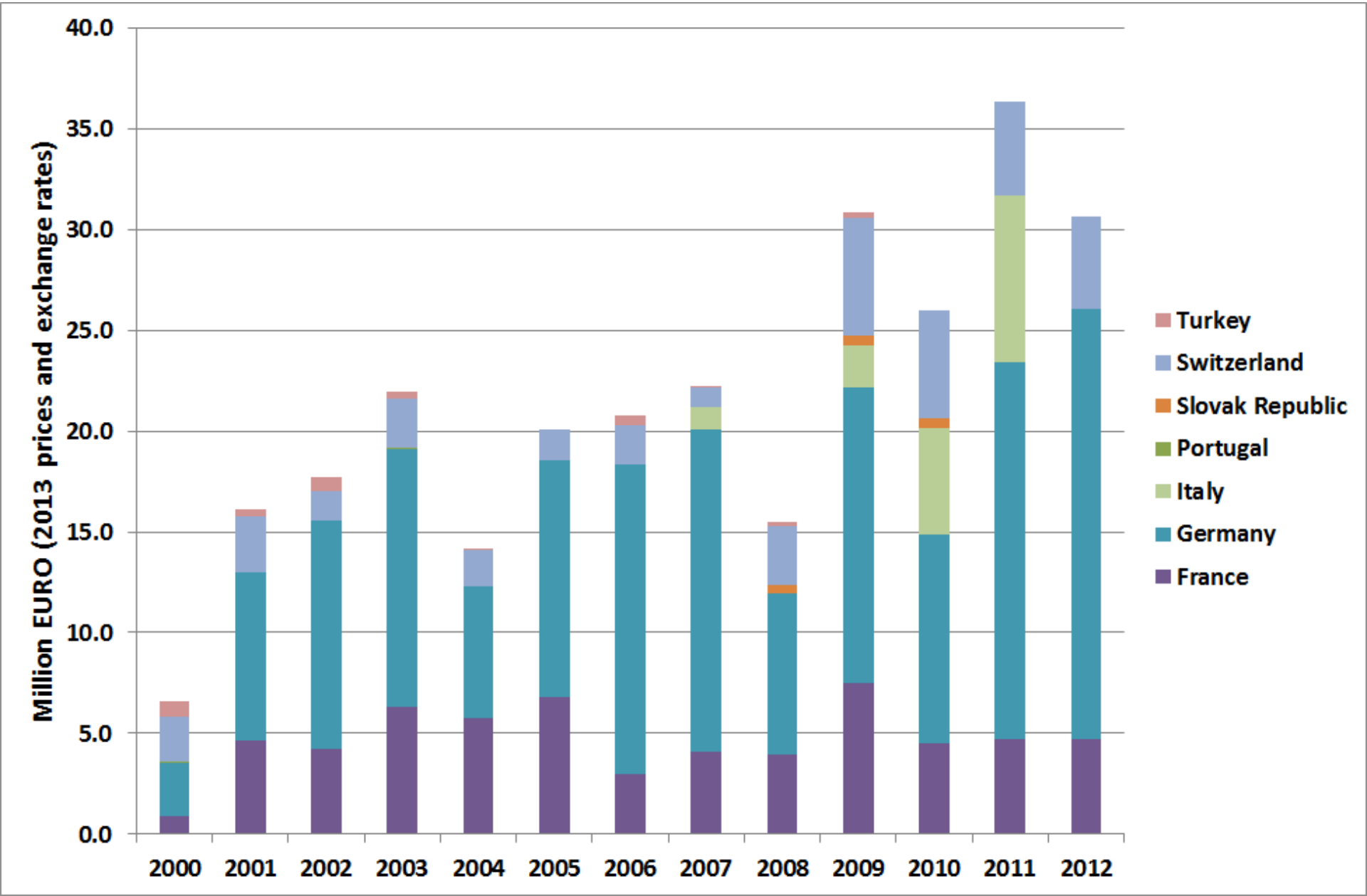
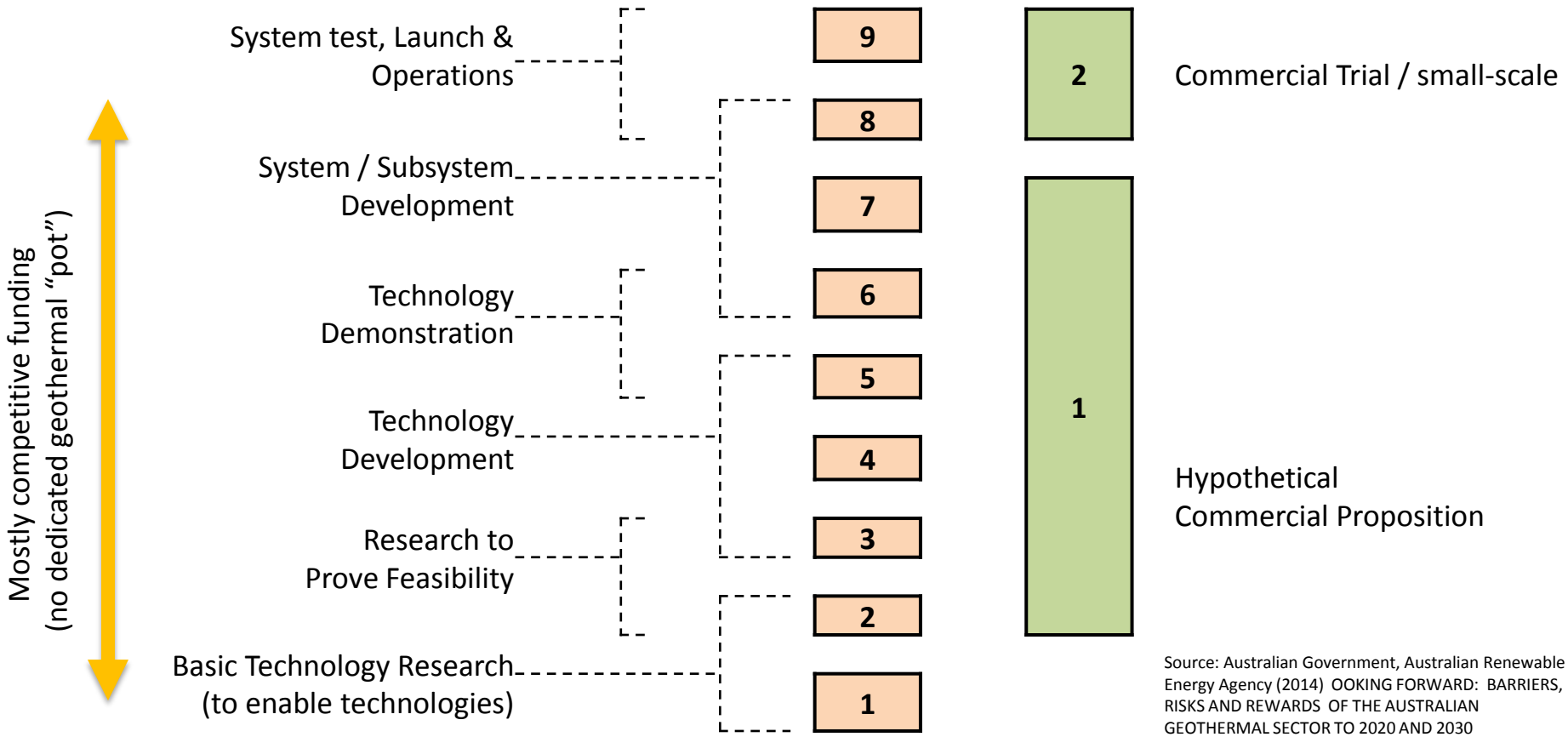
Typical investments into geothermal energy research and innovations as reported to the IEA (subset of ERA-NET countries)



Public R&D funding is mostly at low TRLs

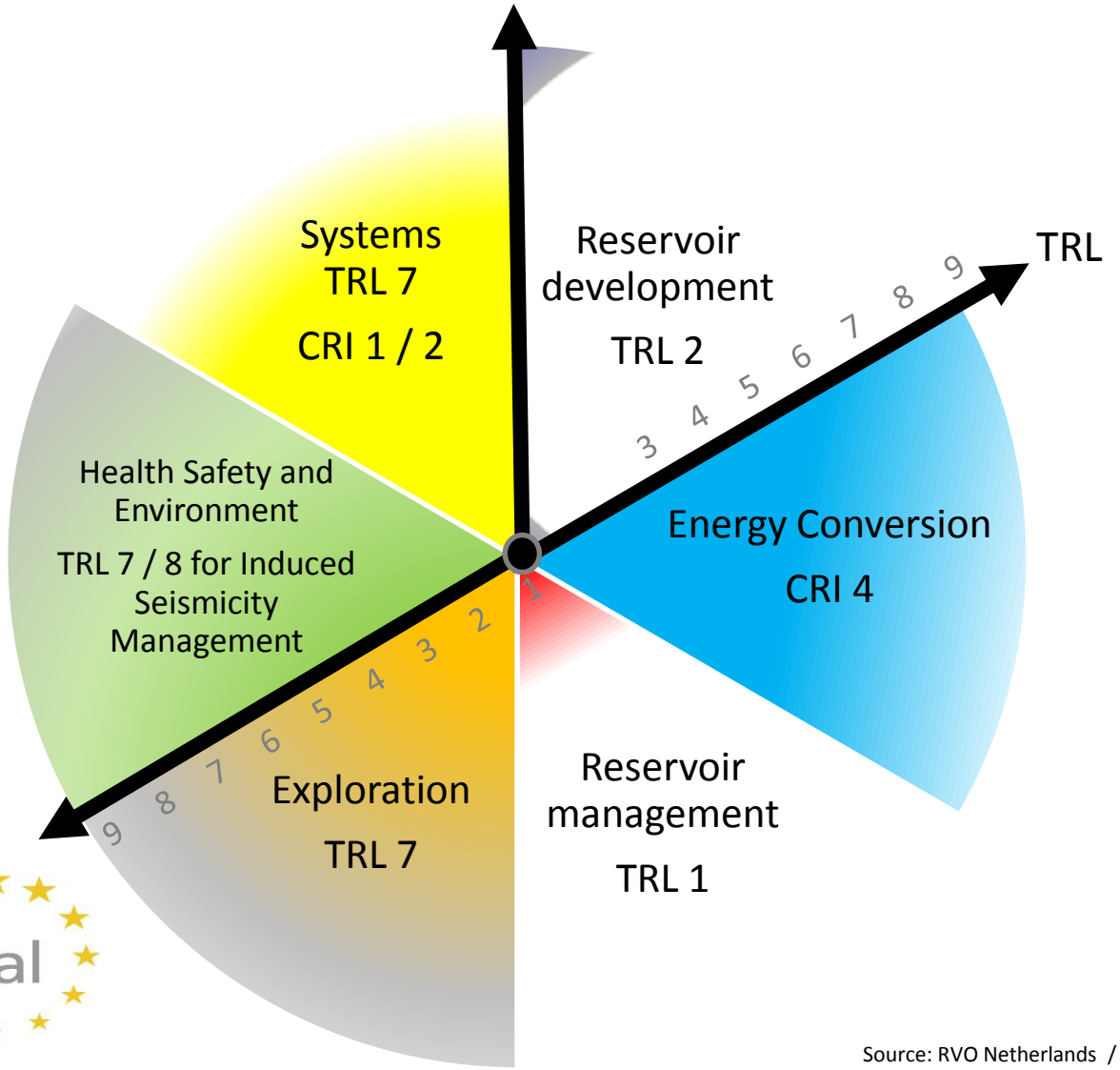
TRL - Technology Readiness Levels

CRI - Commercial Readiness Indices



Source: Australian Government, Australian Renewable Energy Agency (2014) OOKING FORWARD: BARRIERS, RISKS AND REWARDS OF THE AUSTRALIAN GEOTHERMAL SECTOR TO 2020 AND 2030

Energy R&D on Engineered Geothermal Systems



Geothermal ERA-NET

Source: RVO Netherlands / Swiss Federal Office of Energy

Barrieres to research and innovation

Technical

Required tools, equipment, processes and methodologies can not be developed efficiently; lack of stable framework for transnational collaboration (EC is an exception, but calls too infrequent to enable long-term durable cooperation).

Economical

Companies are usually SMEs without access to significant financial resources

Commercial

Intellectual property rights do not foster an open, collaborative research and innovation environment

Organizational

Applied research and innovation is difficult to achieve in operational settings. Research communities need to interact more strongly with one another and a willing industry.

Political

In many countries the political will to invest in geothermal research and innovation is limited (poor public perception, weak (often insignificant) national networks to promote geothermal energy research and innovation)

Geothermal
ERA-NET

Existing opportunities

- Important and historic background on hydrothermal systems
- High level of knowledge in academia
- In some cases a large degree of internationalization.
- Operators are in general readily open to grant access to researchers.
- Follow the Italian example of research collaboration with industry and availability of national labs
- Beginnings of organized research infrastructures (EPOS)

Geothermal
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New opportunities

- Improved information and data exchange
- Raising awareness of geothermal energy's credentials as a green and renewable energy resource
- A "lighthouse"-project to show that geothermal energy is a valuable technique for almost any geological setting.
- Demonstrate reliability to investors.
- Drive towards improved reservoir management
- Development of start-up community.
- European joint call for research and innovation (GEOTHERMICA*)
- Develop a back-bone for a transnational European geothermal innovation system (GEOTHERMICA)

Geothermal ERA-NET

*GEOTHERMICA; ERA-NET Cofund Action on Geothermal Energy within the H2020 framework of the EC (currently under development)