

Can we change the direction of Innovation towards a greener path?

Informal session 4: International collaboration for sustainable economic diversification

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Outline

1. The direction of Innovation
2. Overview of clean technologies trend
3. WIPO and other IP offices initiatives



Diverse technologies
have driven innovation growth
over the past 100 years



**Engine &
Transport**

1895–1925



Biopharma

1930–1960



ICTs

1965–2000



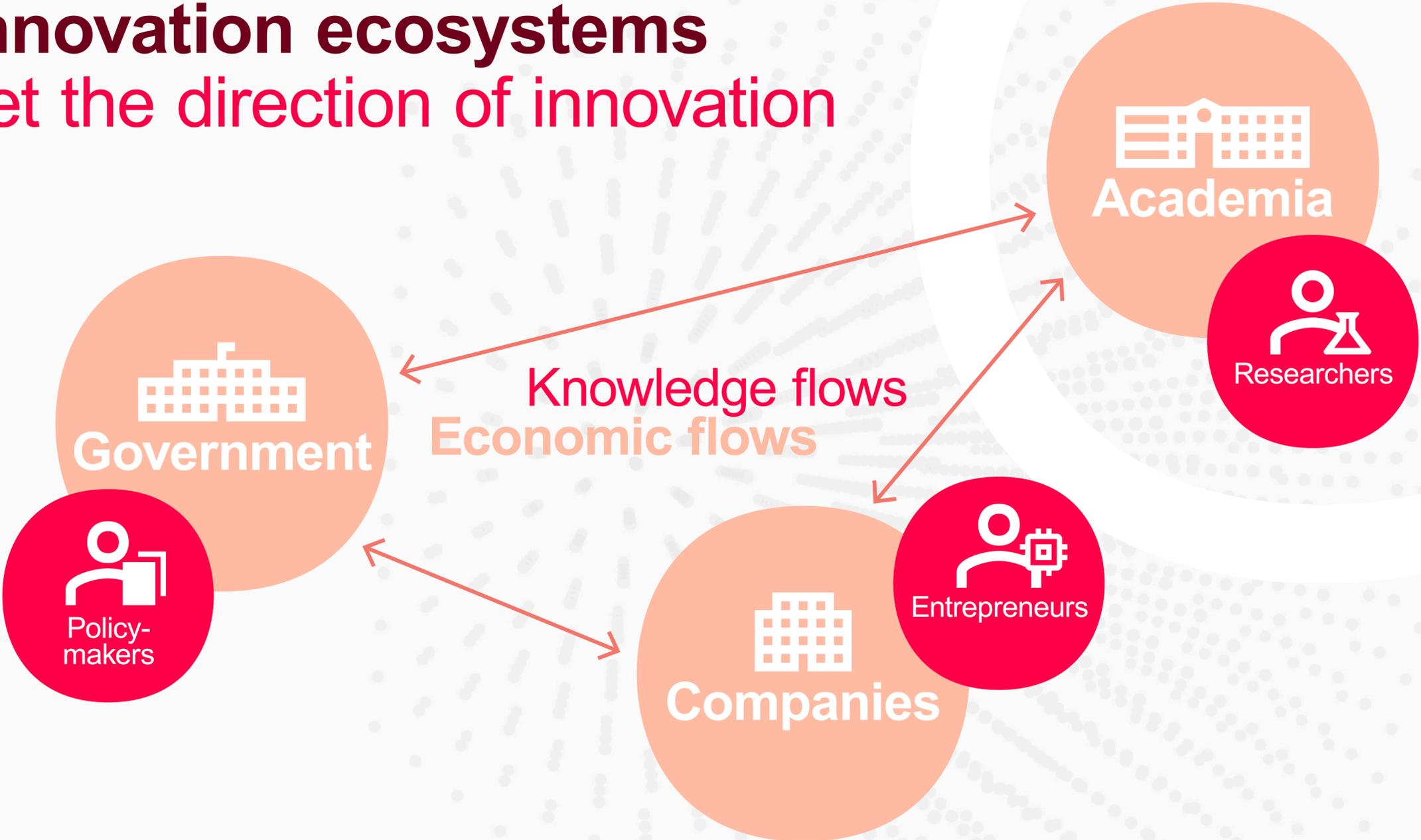
**Digital
technologies**

2000–2020

What is the Direction of Innovation?

“This is the sum of all the decisions individuals, firms, universities and governments make on which technological opportunities to pursue at any one time.”

Innovation ecosystems set the direction of innovation



Private vs. Social Returns to innovation



- **Innovations have a transformative effect**, for better or for worse, on the environment, public health, and local communities.
- **Companies** seize innovation opportunities more quickly, but they are also drawn to short-term and less risky projects
- Yet, longer term opportunities are riskier and frequently **hold the largest positive social returns**
- Local and national governments are not be able to solve global challenges without a **multi-stakeholder and international coordination**

COVID-19: Public–private innovation is vital to leverage the common good



COVID-19 vaccines
generated equivalent
of **83% of global GDP**



USD 71 trillion
Social benefit of
COVID-19 vaccines



USD 80 billion
Private benefit of
COVID-19 vaccines

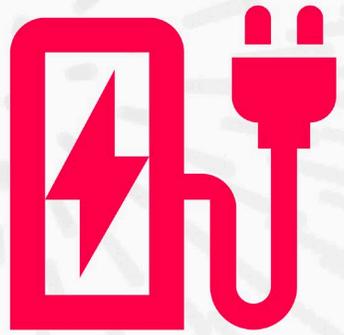
A collective imperative



Facts:

1. Since 1970, nearly 80% of GHG emissions have been **due to human activities**
2. **Global loss of USD 520 billion** in well-being due to extreme weather, disproportionately impacting the poor (World Bank)
3. Governments are **setting ambitious targets** to meet their Paris Agreement commitments
4. Renewed interest from the **private sector** to address climate change
5. **Constraints on the uptake of low-carbon technologies** remain.

Global clean technologies were spurred by the 1973 oil crisis but have stagnated since 2012



1973–2011:
6% annual growth

2012–2017:
0% annual growth

1973

1975

1985

1995

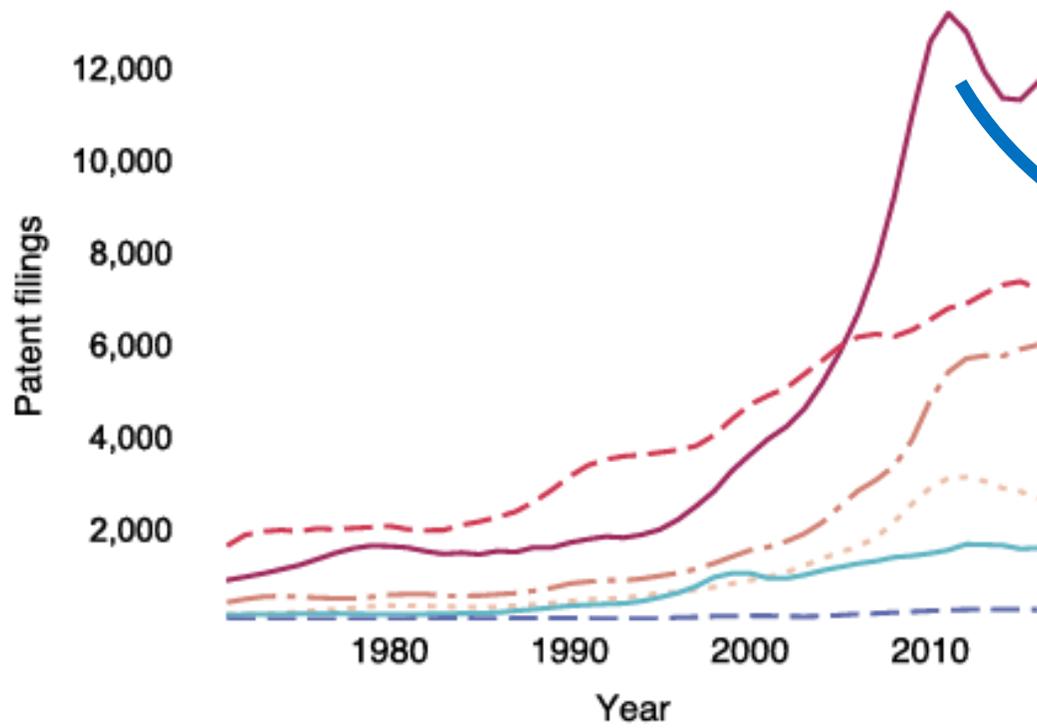
2005

2012

2015

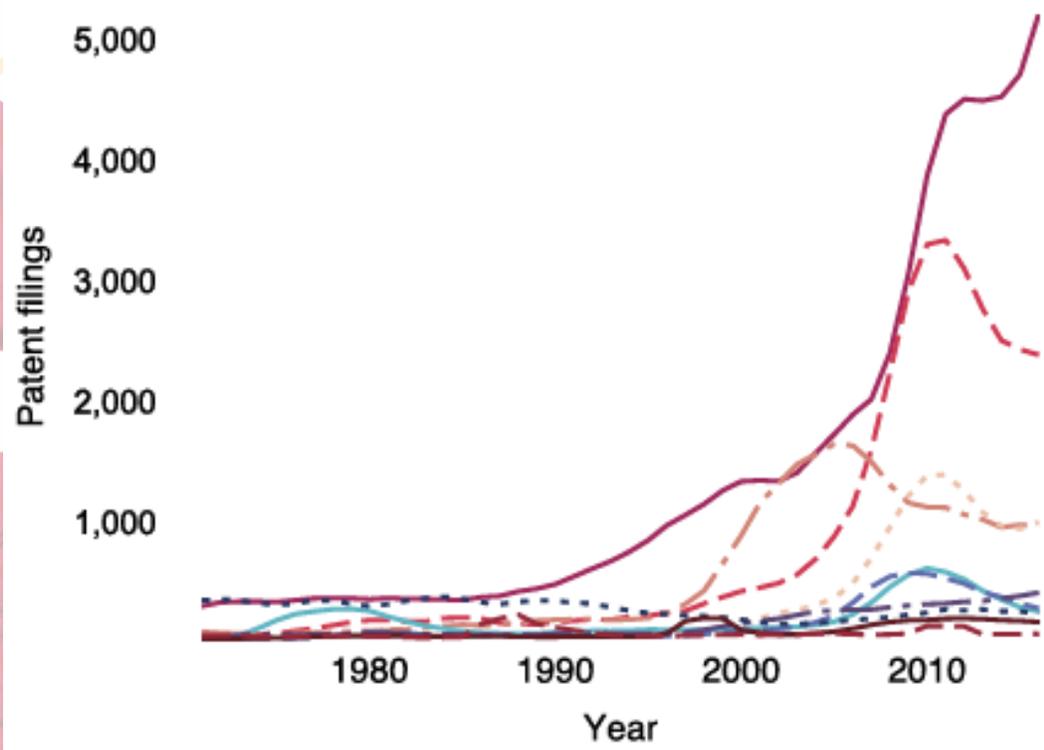
Energy related technologies are the fastest growing ones

Figure 3.3a Total patent filings in clean technologies by categories



- Climate change mitigation - Energy
- - Environmental management
- . Climate change mitigation - Transportation
- ... Climate change mitigation - Buildings
- Water-related adaptation technologies
- - Capture, storage or disposal of greenhouse gases

Figure 3.3b Climate-change mitigation technologies in energy by subcategories



- Energy storage
- - Solar photovoltaic energy
- . Fuel cells
- ... Wind energy
- Solar thermal energy
- - Biofuels
- . Hydrogen technology
- ... Nuclear fission reactors
- Fuel from waste
- - Superconducting elements or equipment

Constraints

1. **Limited incentives** to invest in non-polluting technologies
2. **Insufficient market demand** for green technology adoption
3. **Path-dependency**: firms relying on dirty energy continue to depend on dirty technologies (*carbon lock-in*)
4. New non-polluting technologies are **risky and costly**
5. Newer specialized firms in green technologies **face significant barriers to scale up**
6. Need for **investment into enabling technologies**, such as energy storage facilities

Main source





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WIPO GREEN Database of Innovative Technologies and Needs

the WIPO GREEN database is a free, solutions oriented, global innovation catalogue that connects needs for solving environmental or climate change problems with tangible solutions. The database consists of user uploads of needs and solutions, green technology patents from the WIPO Patentscope database, imports from select partner organizations, relevant knowledge material, and relevant expert profiles. Some of the unique features of the database are: Always-on AI-assisted auto-matching, user uploads tracing and alerts, full-text search for solutions based on long need descriptions, and the Patent2Solution search function for finding commercial applications of a patent. Free registration is required for uploading.

Please help us by [letting us know](#) if you have initiated contacts or technological transfer agreements or similar through use of the database.

ENERGY

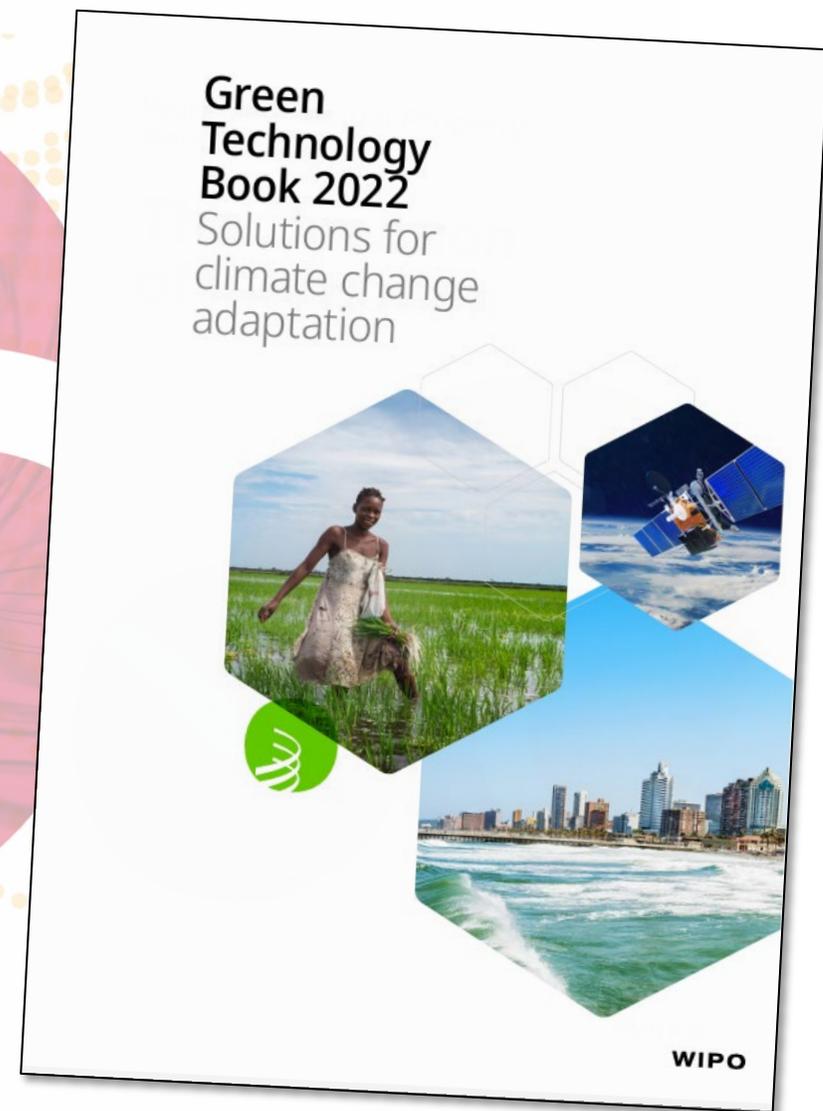


WATER



FARMING FORESTRY





WIPO Green: Spotlight on IP Office Initiatives



Accelerated Patent Prosecution

Arabic | French



Provision of Green Data and Analysis by the IP Office

Arabic | French



Matchmaking and Business Rounds

Arabic | French



Regional Cooperation on Green IP Matters

Arabic | French



Awards for Green Technology Innovation

Arabic | French



Joint Initiatives with WIPO GREEN

Arabic | French



Classification Systems for Green Technology Solutions

Arabic | French



Training Government Officials about Green Innovation

Arabic | French



Green Patent Prosecution Highways

Arabic | French



Financial Support for Green Patent Applications

Arabic | French



IP Awareness Raising Activities

Arabic | French



Upcycling Program for Counterfeit Goods

Arabic | French



IP Services for Entrepreneurs

Arabic | French

Innovation is inevitable.

It's direction is not.

The choices we make now will determine the course of the future.

Thank you!

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