

THE OECD STI OUTLOOK 2018: HIGHLIGHTS

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OECD STI Outlook – an introduction

- An OECD flagship publication
- Asks: “What’s new in the field of science, technology and innovation policy?”
- Provides an international review based on latest policy information and indicators
- Draws upon the EC-OECD STIP Compass database
- Published every 2 years, for the last 20+ years
- 2018 edition launched in November 2018 by the OECD Secretary General



The STI Outlook 2018 has 14 chapters

- Covering a wide range of topics

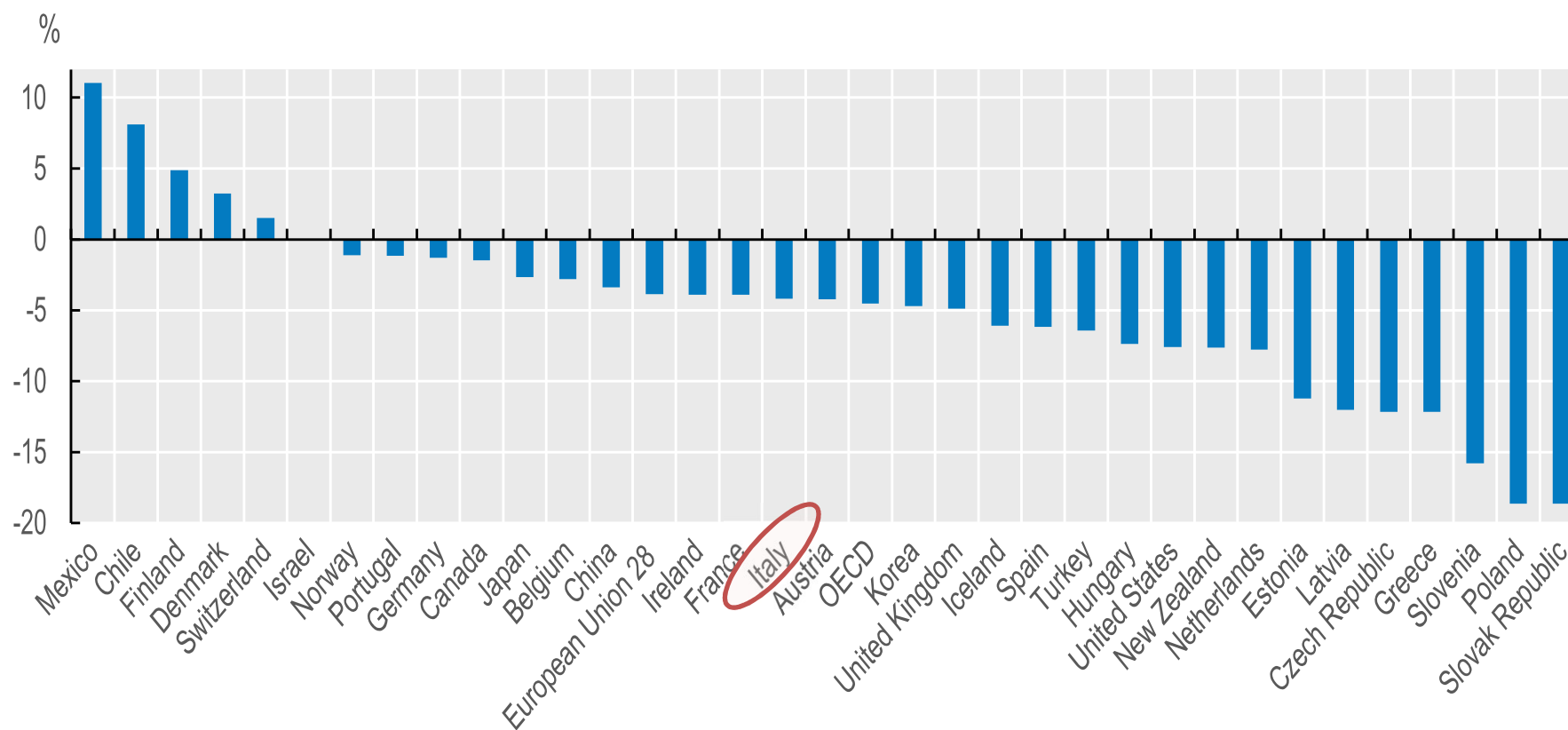


STI POLICY RESPONSES TO MEGATRENDS AND DIGITALISATION

Governments account for a decreasing share of national R&D expenditures

Change in the share of government in the direct funding of gross domestic expenditure on R&D, 2009-16

In percentage points

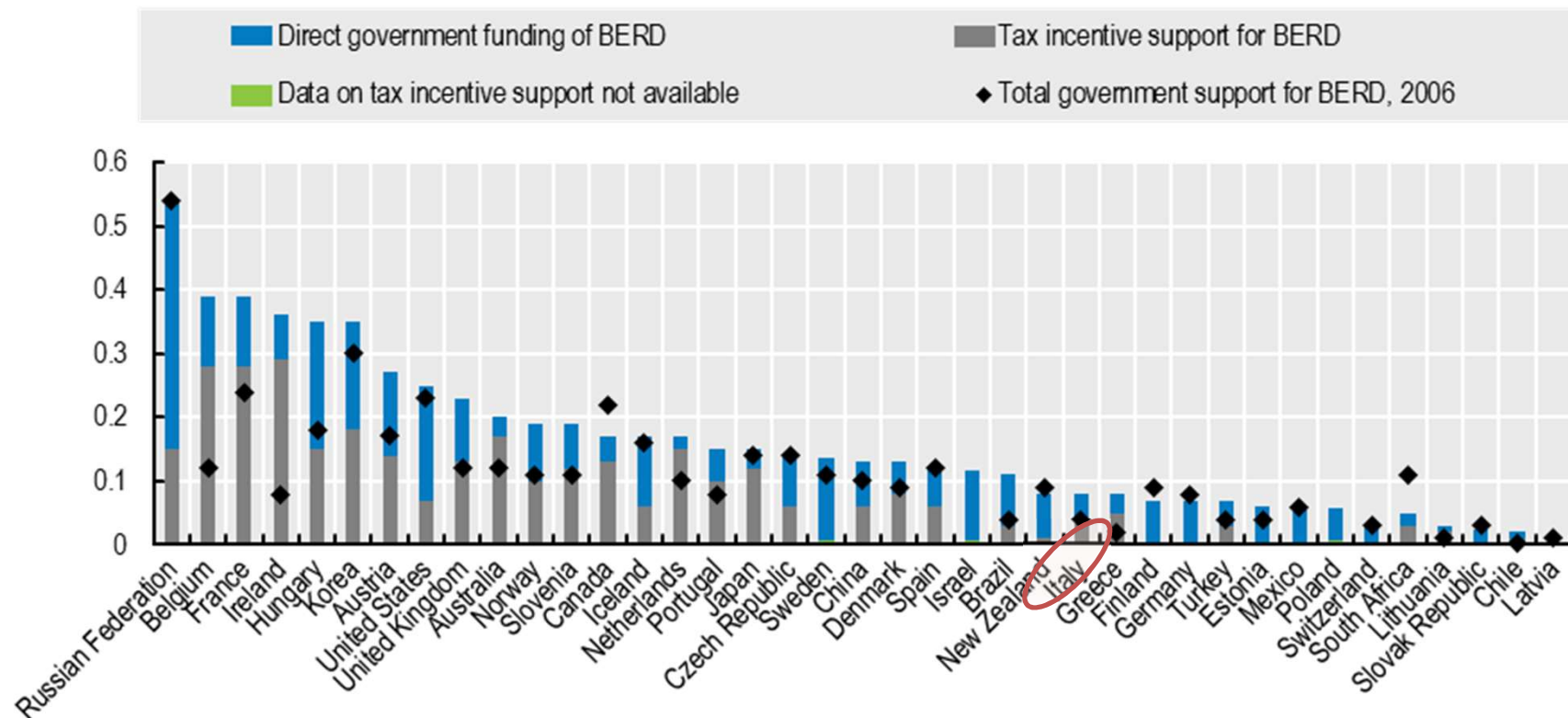


Source: OECD Science, Technology and Industry Outlook 2018

Direct government funding of business R&D has declined, with the growth of tax credits

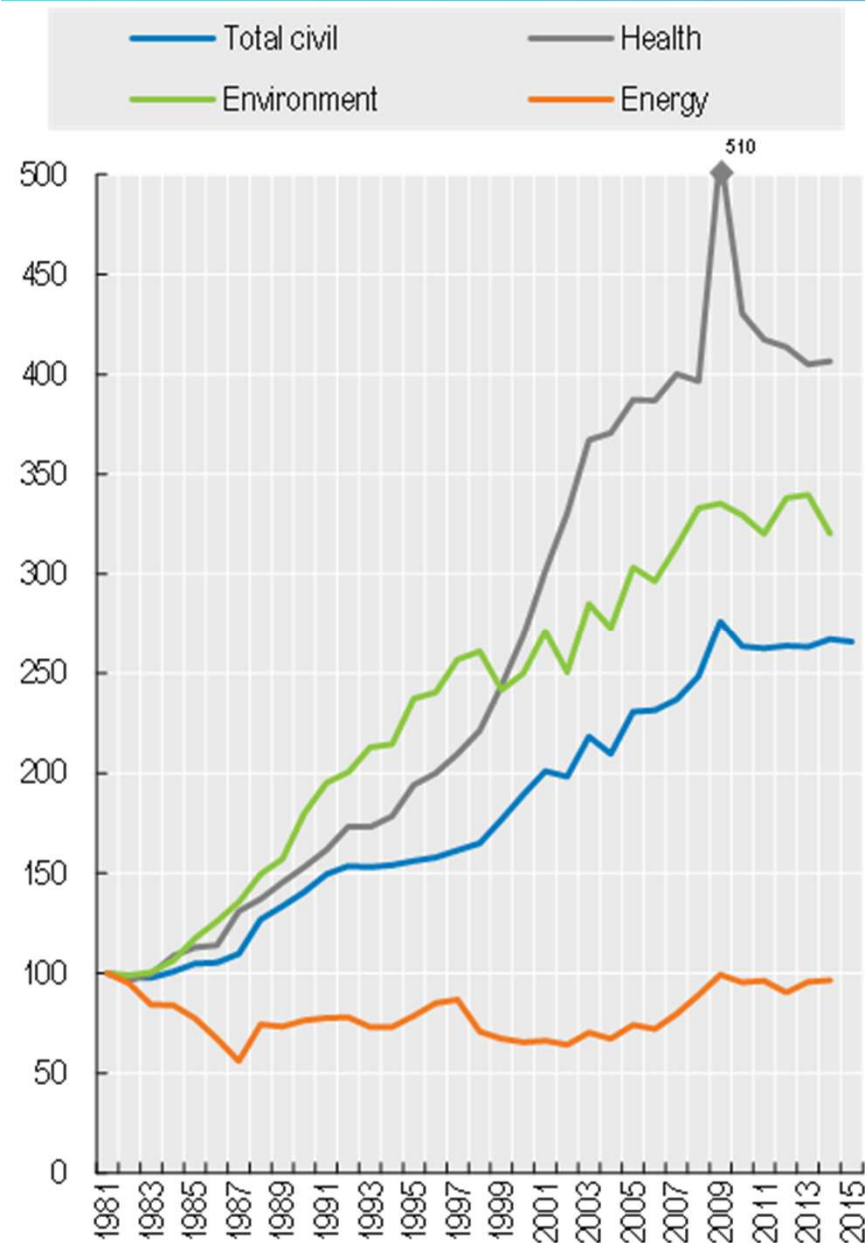
Direct government funding and tax support for business R&D, 2015 and 2006

As a percentage of GDP



Source: OECD (2017e), *OECD Science, Technology and Industry Scoreboard 2017: The digital transformation*

Growing societal concerns are changing balances in public R&D budgets



If well-managed and used in conjunction with social innovation and policy reforms, scientific and technological advances can alleviate many of these challenge:

- Gene editing could revolutionise today's medical therapies,
- nanomaterials and bio-batteries could provide new clean energy solutions,
- artificial intelligence (AI) could become an important drug discovery tool over the next decade.

Shifts in STI policy: orientation towards SDGs

- The SDGs are an increasingly prominent political framework for STI policy agenda-setting
 - But they have yet to have a big impact at the operational level of funding
 - And the challenge of international cooperation on the SDGs remains



The turn to mission-oriented policy

- Many governments are embarking on a **new era of mission-oriented** STI policies, often influenced by the SDGs
- Concrete and market-oriented, with **measurable goals** and defined time frames
- **Partnerships** with business and civil society are key, acknowledging the limits of govt as R&D performer, innovator and diffuser
- **Governments' capacity to influence directions?**
 - Hollowing-out: do govts have the appropriate skills and organisational capabilities?
 - Decline in share of govt expenditures in R&D



Digitalisation can also transform the evidence base for STI policy and governance

- STI (policy) processes increasingly leave “digital traces” that can be used for indicators and analysis
- Linking different data sources can provide new insights – at relatively low cost
 - Provide more **granular** and timely data analysis to improve the allocation of research and innovation funding;
 - Improve the **timeliness** of performance-monitoring data, to enable more agile short-term policy adjustments
 - Detect **emerging patterns** of change and stability in research, technology and industry, to support short-term forecasting of issues of policy concern
 - Promote **inclusiveness** in STI policy agenda-setting, by opening policy intelligence data to a broader range of stakeholders



ORCID

euroCRIS
Current Research Information Systems

DIGITAL
science

ELSEVIER

Research Intelligence



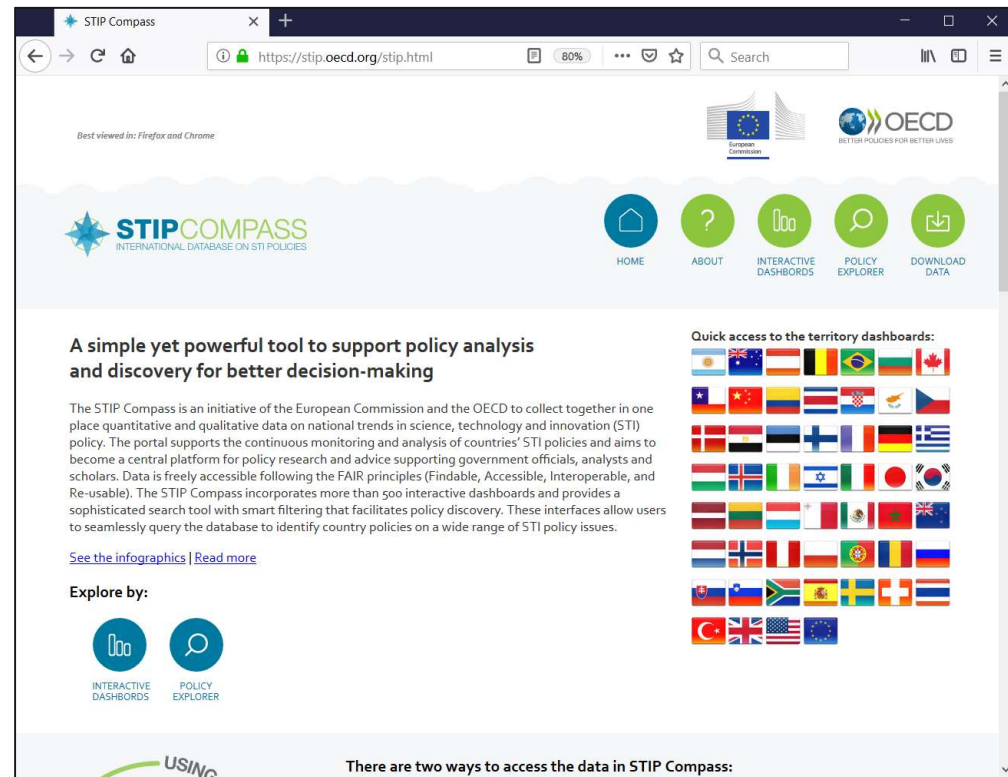
EC-OECD STIP COMPASS

An essential building block for the
OECD's STI Outlook



What is STIP Compass?

- An **integrated knowledge management platform** for collecting, storing, linking, visualising, finding and analysing information on countries' STI policies
- **Fully open** – anyone can use the platform and download the data
- Jointly implemented by **EC and OECD team**
- Beta version launched in April 2018





What data does STIP Compass integrate?

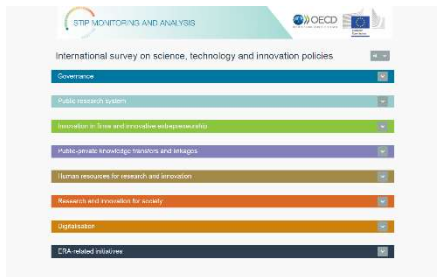
- The EC/OECD STI Policy **survey** is the main data source: **+6000 policy initiatives from +50 countries**
- Semantic integration with **linked data**:
 - 2,000+ **OECD STI policy-related publications** (i-Library)
 - 2,000+ **EC publications**
 - 5,000+ **ScienceDirect** academic papers from relevant journals
 - Currently **27 statistical indicators** from OECD.Stat
- **Next steps**:
 - Linking 400+ **statistical indicators** to policy initiative data and adding a quantitative data visualisation tool
 - Embedding 100s of relevant **RSS and Twitter feeds** in country pages



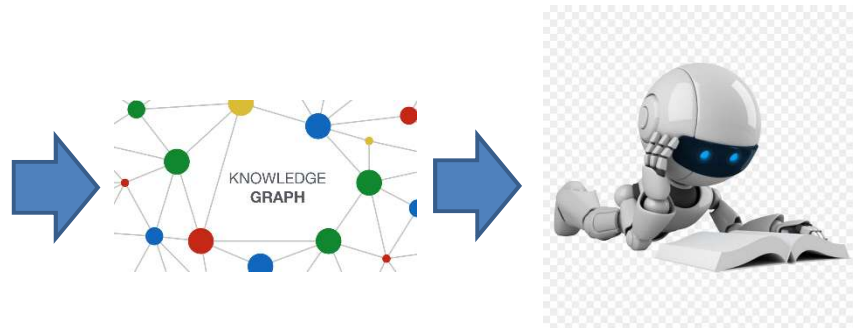
STIP Compass components

Components are seamlessly linked through the knowledge graph

Online survey /
policy monitoring
tool, based on open
source LimeSurvey
software

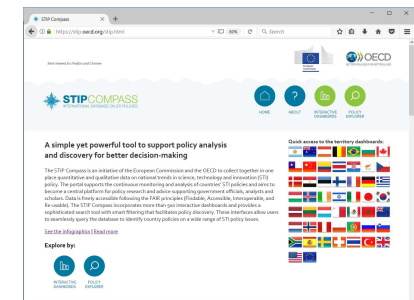


Knowledge graph for linking and
organising data and generating
the survey structure specific to
STI policy



Algorithmic robots for identifying and
tagging relevant information collected
through the survey, but also from
other (internal and external) sources

Semantic database,
using proprietary
MarkLogic software



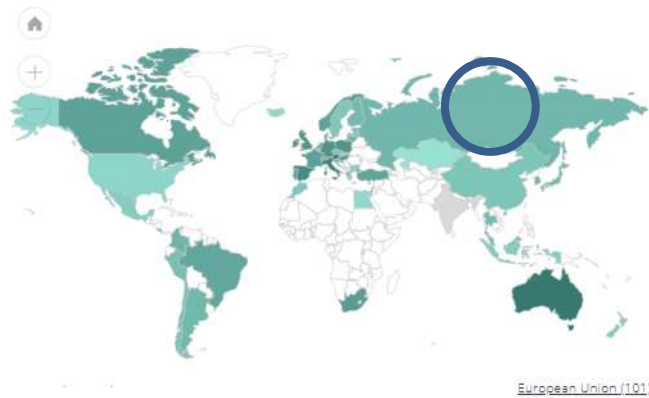
Graphical user
interfaces, incl.
>500 interactive
dashboards



Interactive dashboards

Structured data → Semantic visualisation tools

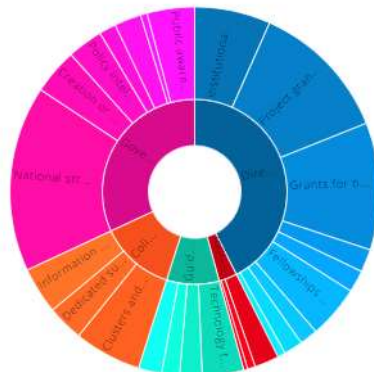
Territories



Themes



Policy instruments



Target groups





Policy explorer: search and discovery



Powered by **O.N.E. SIGHT**

OPTIONS

SAVED ITEMS

SAVED QUERIES

VIEW MODE

8 results for artificial intelligence

Results per page : 10 20 50

STIP country (3)

CHINESE ASSOCIATION FOR ARTIFICIAL INTELLIGENCE
STIP policy initiatives and instruments (2017) | Policy initiative
The association was established to support research on artificial intelligence in China.
[Show more details](#)

Science, technology and innovation (STI) policy and governance in the Russian Federation now focus on the new Strategy of Scientific Technology
STIP policy initiatives and instruments (2017) | Policy debate
Science, technology and innovation (STI) policy and governance in the Russian Federation now focus on the new Strategy of Scientific Technology Development of the Russian Federation, adopted by the President of the Russian Federation through Decree ...
[Show more details](#)

Programme Digital Economy of Russia
STIP policy initiatives and instruments (2017) | Policy initiative
Supporting digitalisation of the Russian economy
[Show more details](#)

NATIONAL TECHNOLOGY INITIATIVE - NTI
STIP policy initiatives and instruments (2017) | Policy initiative
Programme for creation of fundamentally new markets and the creation of conditions for global technological leadership of Russia by 2035.
[Show more details](#)

INTERNET PLUS
STIP policy initiatives and instruments (2017) | Policy initiative
The action plan aims to increase competitiveness of Chinese firms through application of digital technologies.
[Show more details](#)

NATIONAL ENGINEERING LABORATORY

Despite the recent economic crisis, which impacted on the funding of research and development (R&D), the debates on government support for business
STIP policy initiatives and instruments (2017) | Policy debate
Despite the recent economic crisis, which impacted on the funding of research and development (R&D), the debates on government support for business innovation and innovative entrepreneurship have advanced on some important issues. The parliamentary ...
[Show more details](#)

Digitalisation has been a key factor in the Chinese economy's growth, hence the need to increase access to Internet connections, cultivate
STIP policy initiatives and instruments (2017) | Policy debate
Digitalisation has been a key factor in the Chinese economy's growth, hence the need to increase access to

REFINE AND DISCOVER TOOLS

REFINE

DISCOVERY

LIBRARIES
☐ STIP policy initiatives and instruments (2017) ⁽¹⁾⁽²⁾

STIP COUNTRY
☐ Austria ⁽⁴⁾
☒ Brazil ⁽¹⁾
☐ Brussels Capital ⁽²⁾
☐ Canada ⁽⁵⁾
☒ China ⁽⁴⁾
☐ Colombia ⁽¹⁾
☐ Finland ⁽⁵⁾
☐ France ⁽²⁾
☐ Germany ⁽²⁾
☐ Italy ⁽¹⁾
☐ Luxembourg ⁽¹⁾
☐ Malta ⁽¹⁾
☐ Morocco ⁽²⁾
☐ Netherlands ⁽¹⁾
☐ Norway ⁽¹⁾
☐ Poland ⁽²⁾
☐ Portugal ⁽²⁾
☐ Republic of Korea ⁽²⁾
☒ Russian Federation ⁽³⁾
☐ Slovak Republic ⁽¹⁾
☐ Slovenia ⁽¹⁾
☐ Thailand ⁽²⁾
☐ United Kingdom ⁽⁶⁾
☐ United States ⁽¹⁾

DATES

TOPICS IDENTIFIED FROM THE RESULT SET

GEOGRAPHICAL AREAS IDENTIFIED FROM THE RESULT SET



Query builder

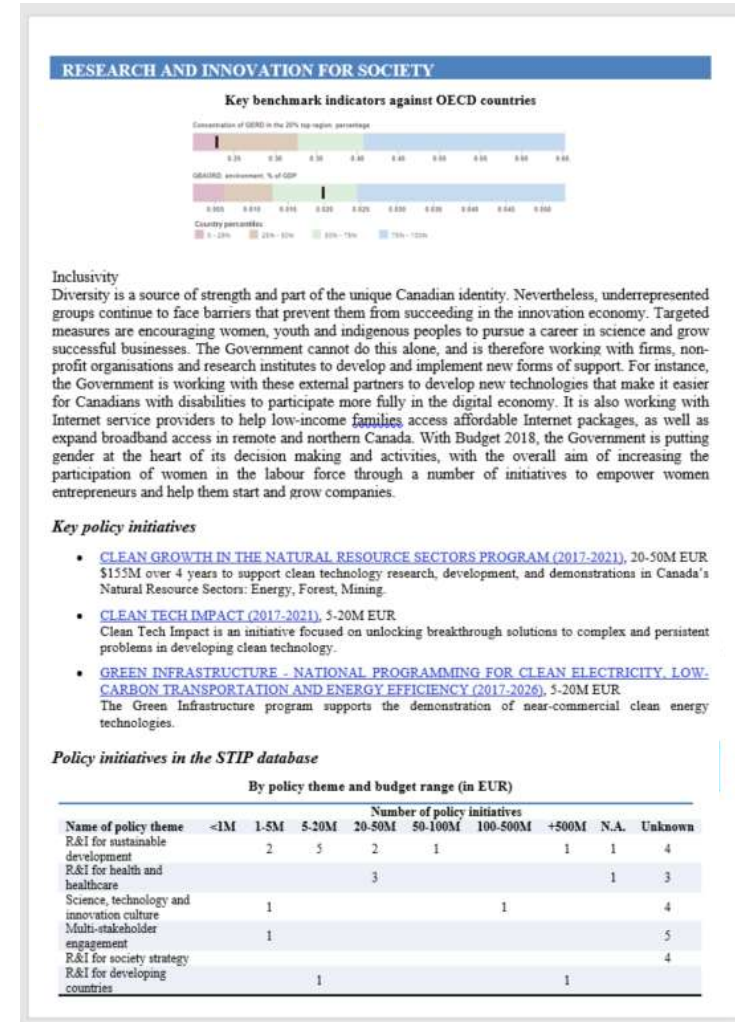
- **Download** the latest policy initiatives of interest for policy analysts and researchers by filtering the database across all its dimensions.
- **API for a 100% portable database:** Other projects can **build queries** as live URLs that yield XML files with the latest data.

The screenshot shows the STIPCOMPASS query builder interface. At the top is the logo and title. Below are several filter sections: 'Output format for the data' with radio buttons for XML (selected) and CSV; 'Territories' with a text input; 'Yearly budget ranges' with a slider from 'Less than 1M' to 'More than 500M' and checkboxes for 'Without budget range', 'Not applicable', and 'Don't know'; 'Policy instruments' with a text input; 'Themes' with a text input; 'Target groups' with a text input; 'Filter by initiative start year' with a checkbox 'Include initiatives starting between' and a slider from '≤ 1990' to '≥ 2020'; and 'Filter by initiative end year' with a checkbox 'Include initiatives ending between' and a slider from '≤ 2008' to '≥ 2021'. At the bottom, it displays '5265 policy initiatives', a citation for the database as of January 2019, a 'DOWNLOAD' button, and a link to the STIPCOMPASS website.



Country overview (dashboard printout)

- **Print-out generated from the country dashboard.**
 - To be released in the next few weeks
- **Data at a glance** introductory section, including:
 - Number of policy initiatives reported
 - Key responsible organisations
 - National strategies in operation
 - Main policy initiatives in operation
- **A section for each policy area in the database, including:**
 - Main current issues of debate
 - Key policy initiatives
 - Table with the number of initiatives in the database by policy theme



Thank you

STI Outlook 2018 web page

<https://oe.cd/stio>



Connect to: www.oecd-forum.org



Follow us: <https://twitter.com/OECDInnovation>



STIP Compass database

<http://stip.oecd.org>

Contact the STI Outlook team

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