# Good practices in user engagement

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inDust Communication Workshop
Bucharest, Romania, 18-19 March 2019

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BSC Barcelona Supercomputing Center
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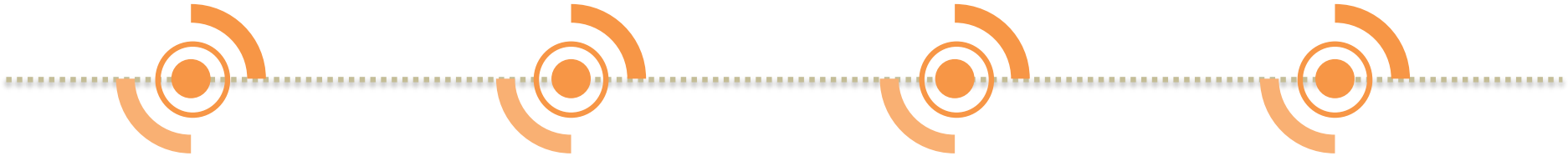
# Users' journey

Establishing '**good practices**' for a user's journey that has different stages



**User engagement**

**Communication Visualisation**

**Capacity building**

**Exploitation**

# Co-production

# Co-production

Joint production or relevant knowledge.

Introduced by Elinor Ostrom (1970s) to study how public services were co-produced between public and private actors.

"A complex meeting  place where several different academic traditions and practices converge, overlap, and influence each other".

*Co-production in climate change research – Bremer and Meisch, 2017*

# Co-production

Three dimensions of co-production in environmental research (including climate, air quality, etc.):

1 - Interdisciplinarity

2 - Interaction with users

3 - Production of usable science

*Lemos and Morehouse, 2005*

# 1. Interdisciplinarity

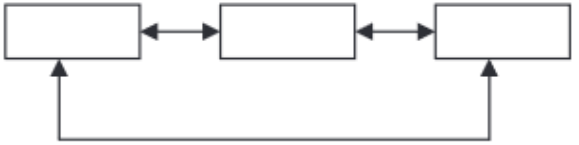
"An integrating synthesis is not achieved through the accumulation of different brains".

*Max-Neef, 2005*

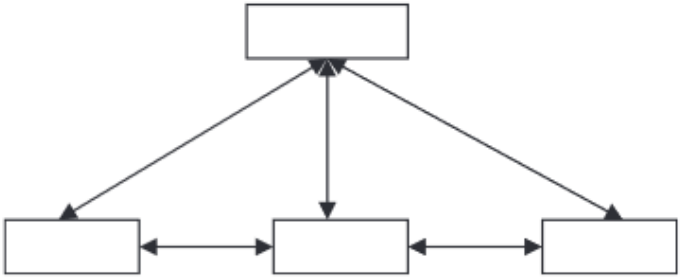
**Disciplinarity.**
(Specialization in isolation)

**Multidisciplinarity.**
(No cooperation)

**Pluridisciplinarity.**
(Cooperation without coordination)



**Interdisciplinarity.**
(Coordination from higher level concept)



# 1. Transdisciplinarity

"Transcending the disciplinary bounds and **involving actors from outside academia** into the research process".

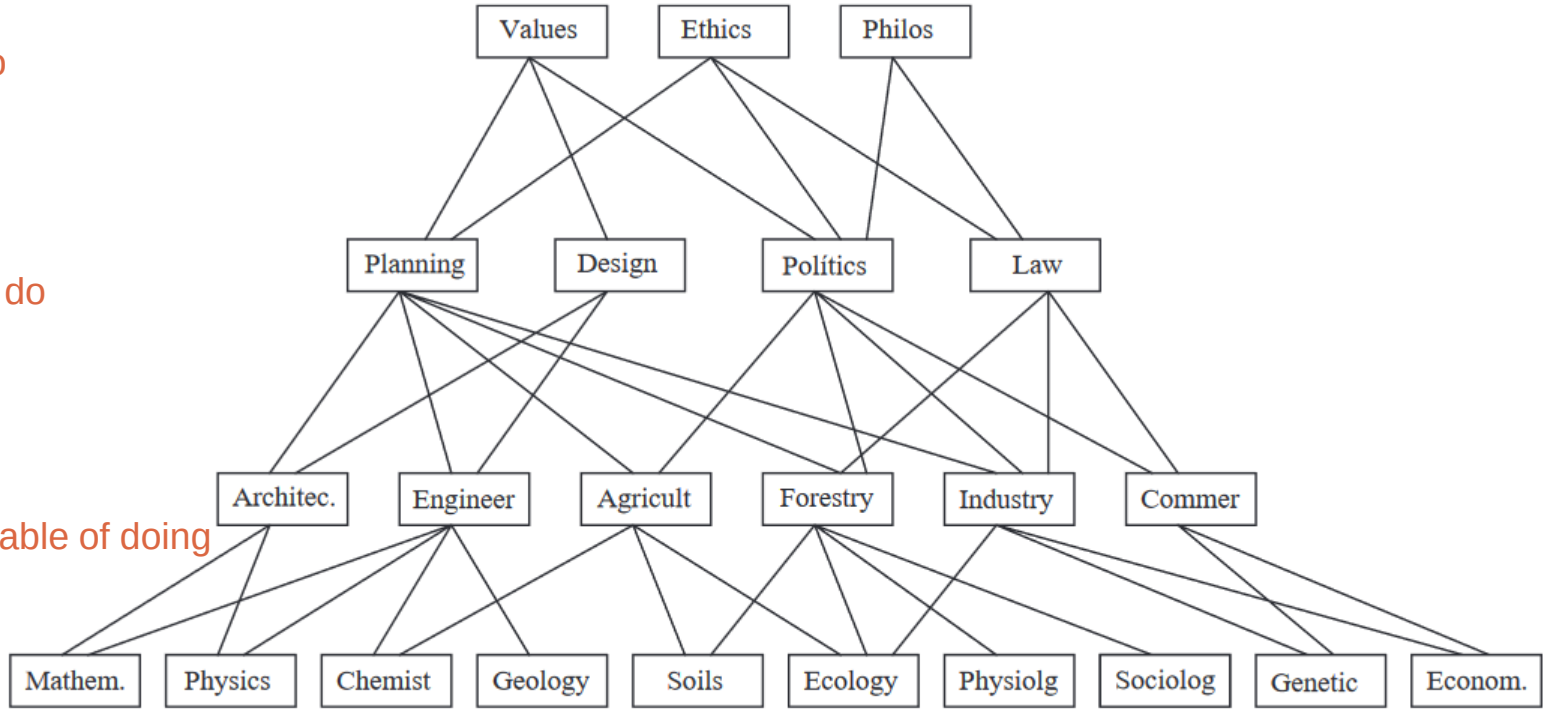
*Burgin and Hofkirchner, 2017*

**Value level**
What we must do

**Normative level**
What we want to do

**Pragmatic level**
What we are capable of doing

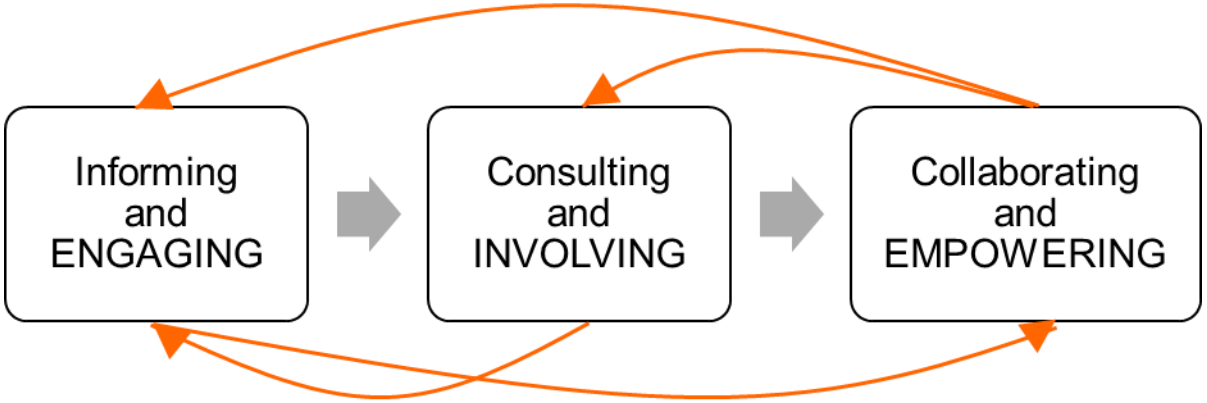
**Empirical level**
What exists



# 2. Interaction with users

## Participation

Long tradition in different scientific disciplines, particularly applicable to environmental research.




- Social media
- Websites
- Communication materials

- Interviews
- Surveys
- Focus groups

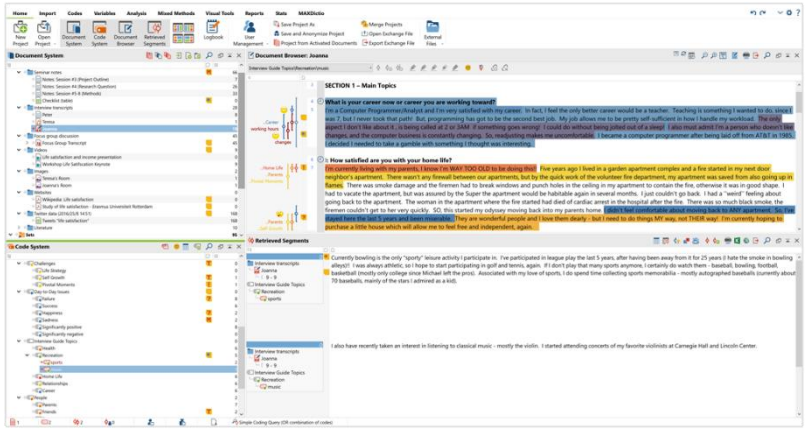
- Partnerships
- Contracts
- Joint developments (case studies, online tools – DST)

# 2. Interaction with users

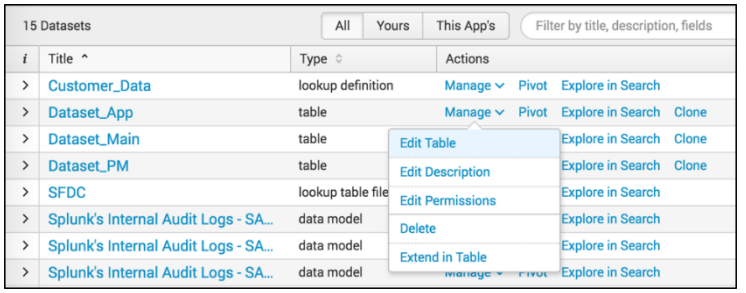
## Analysis techniques

### Qualitative & Quantitative

Discourse analysis

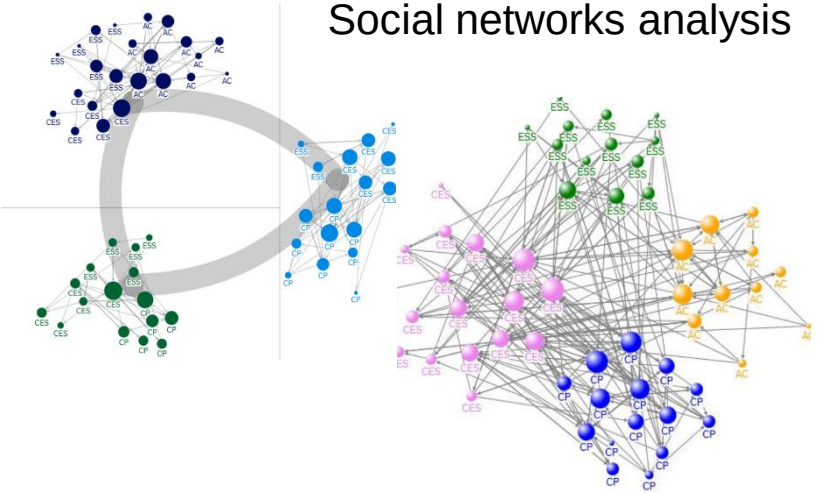


Statistical analysis




Multi-criteria analysis

Social networks analysis



# 3. Production of usable science


- **Tailored** to different sectors & user profiles
- **Timely**
- **Compatible** with in-house systems
- **Accurate** & reliable (user's trust)
- **Format** is appropriate
- **Accessible**
- **Easy to use** (user-friendly)

# Climate services

# Climate services

Provision of climate information to **assist decision-making**.

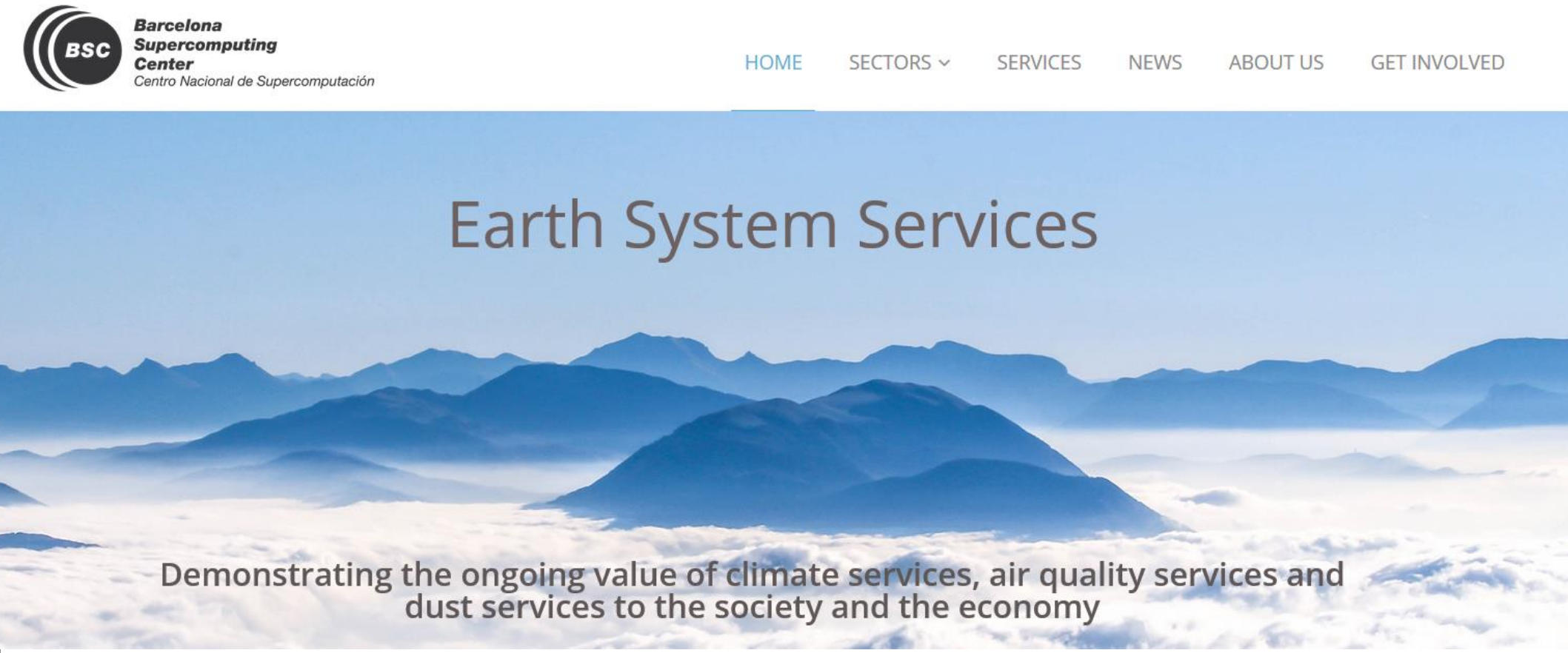
Services must:

- respond to user needs,
- be based on scientifically credible information and expertise,
- require appropriate engagement between the users and providers

**Co-production framework!**

1. inter- & transdisciplinarity/ 2. interaction with users/ 3. production of usable science

# CLIMATE / DUST SERVICES




https://ess.bsc.es/

# Each stakeholder is unique

- Different backgrounds
- Different types of decisions
- Different information needs

There is no
‘one solution that fits all’
This happens even within
the same sector


Arctia/
Raitio
Markus

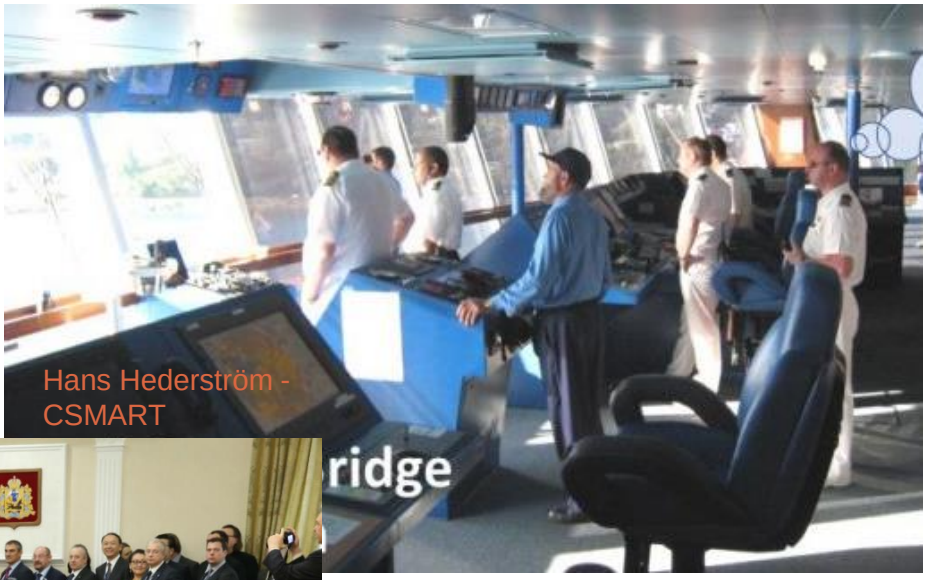
Icelandic
Coast
Guard

SIKU
project

# Stakeholders make decisions under different contexts


SIKU project – tools for documenting ice conditions

Immediate/ day-to-day decisions


Hans Hederström - CSMART

Long-term regulatory and planning decisions

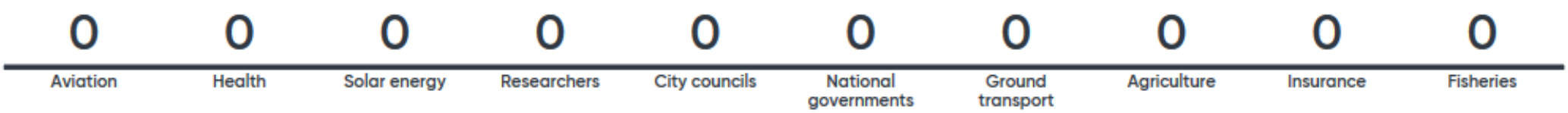
Mikhail Pogodaev – Northern Forum Governors Meeting 2017

Short- and mid-term operational/managent decisions

# Who might be dust stakeholders?


Other…

# Which stakeholders could use dust products?




Mentimeter

# Interactive activity

# 1. Which activities from these stakeholders are affected by dust?

*A person with a respiratory disease (e.g. chronic obstructive pulmonary disease)*

*1: 'I can not play basketball outside'*

# 2. What could stakeholders do with access to dust products/services?

*A person with a respiratory disease (e.g. chronic obstructive pulmonary disease):*

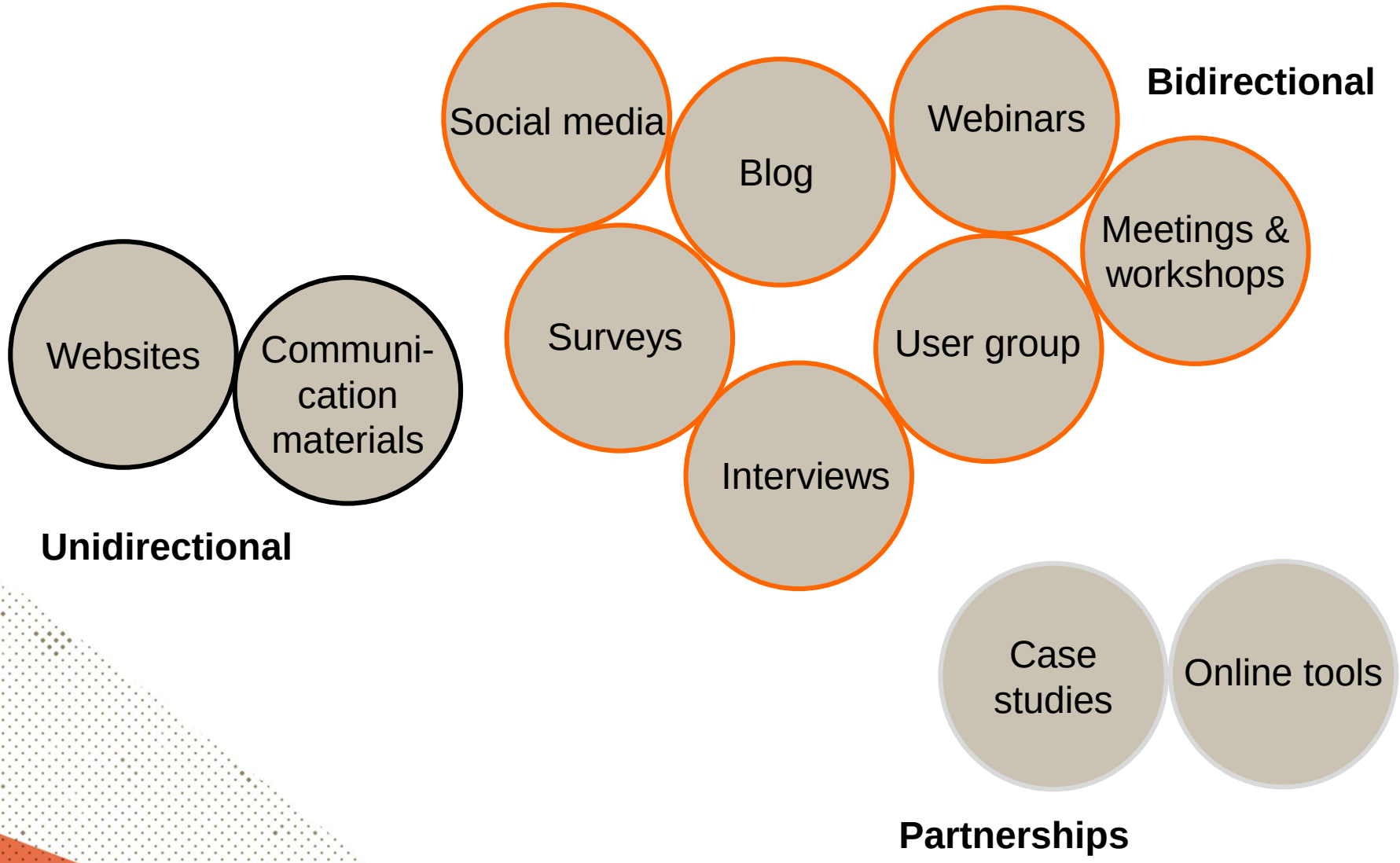
*1: 'I can not play basketball outside'*
*2: 'I will choose a suitable day and time to play basketball'*

# Leaflet

https://prezi.com/p/5bx21d-7r1xs/indust-leaflet/

# How would you interact with stakeholders?

# Tools to interact with stakeholders



# Bidirectional engagement Examples

# Ask stakeholders: User group


## Aim

- Comprehensive overview
- Advice and feedback to the project research
- Help shaping data into relevant information and services

## Challenges

- Find stakeholders
- Gender balance
- Equal contribution
- Sectoral & geographical coverage (bias)
- Over-generalisation
- Meetings: online vs face-to-face (relevant conferences, project GA…)
- User participation in kind vs project partners
- Need to report results back

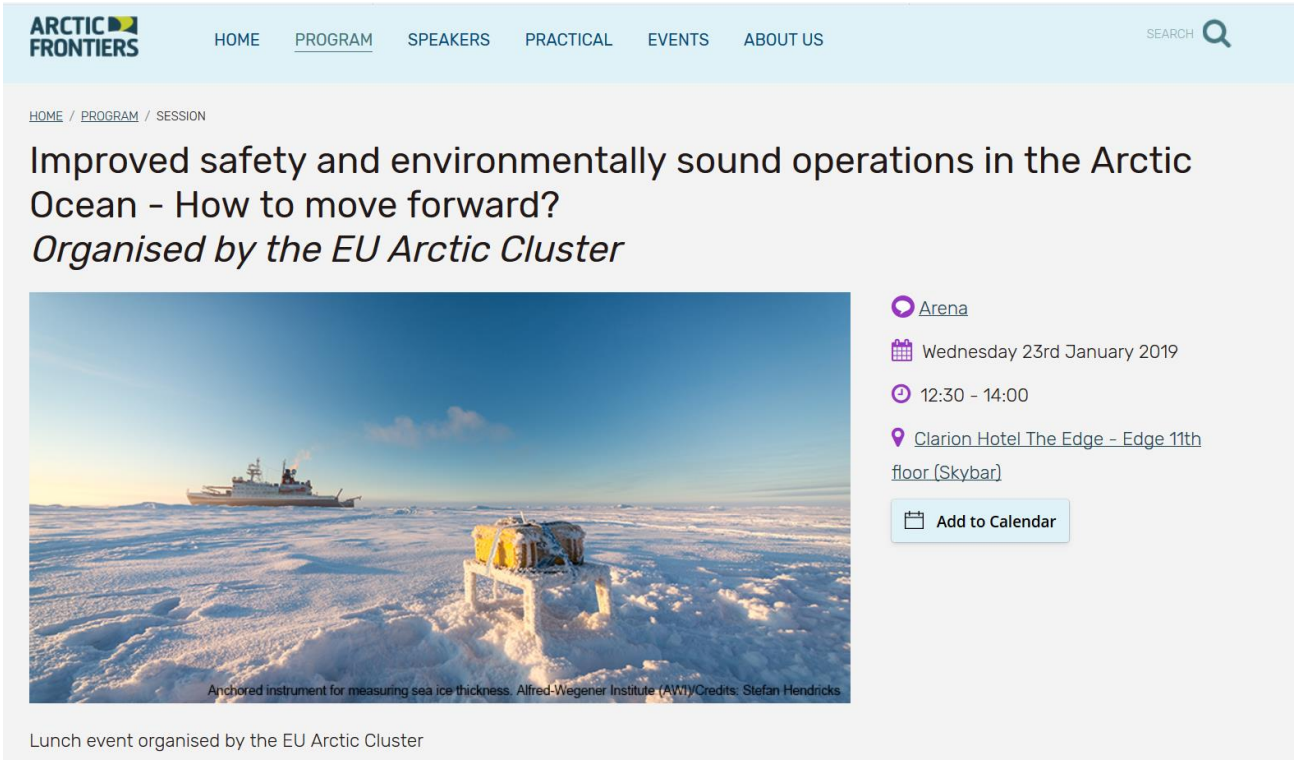
# Go where stakeholders are: Meetings & workshops




## Challenges

- Language
- Trust
- Resistance to change (added value)

# Go where stakeholders are: Meetings & workshops




- Relevant conferences attended by stakeholders (meet face-to-face)
- Side events (with keynote presentations, round tables, workshop…)
- Booth
- Splinter sessions
- …

# Webinars

- Remote - webinar platform
- Voice/chat questions
- Users' language
- Materials available

## Challenges

- Organisation (time consuming)
- Attendants (reminders)
- Personal invitations work well

# Blog

## Polar Prediction Matters




*The Arctic is often described as vulnerable, cold and exotic place with stereotypical images of indigenous and non-indigenous communities but the Arctic is not a homogenous place (photo: Joonas Vola).*

### Everyday Life in the Arctic

Autor

**Polar Prediction Matters**

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Related Posts

[related_posts]

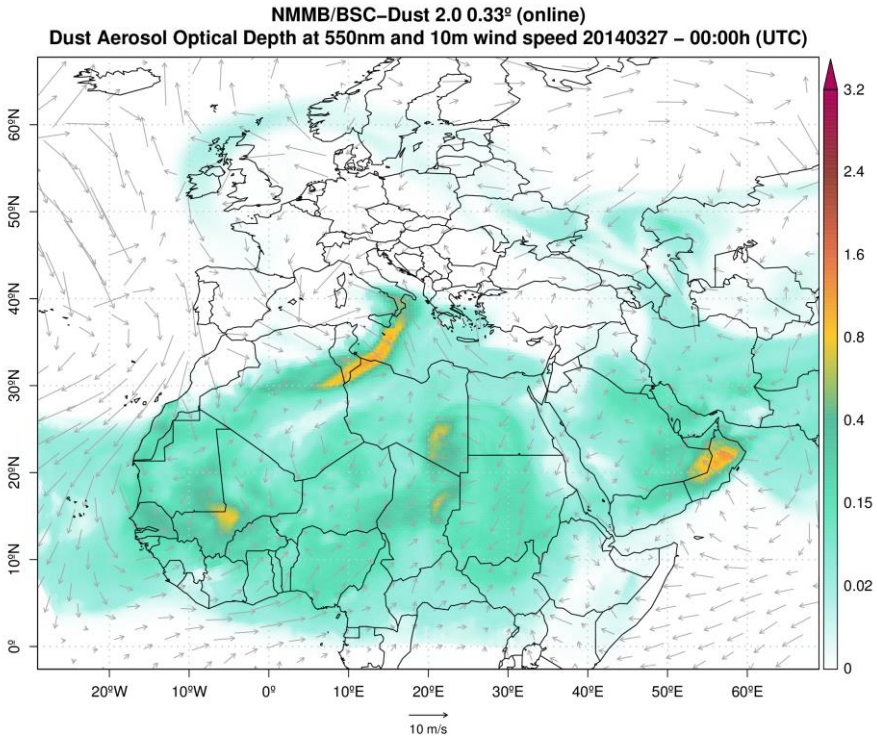
# Partnerships
# Examples

# Case studies

## Why to use them?

- **PERSONAL:** Past events of relevance for stakeholders (affecting their business, activities, etc.)
- **PROOF-OF-CONCEPT:** showcase the utility of forecasts or any other products, showing how the information would have been useful if available at the moment of the event
- **FROM MODEL OUTCOMES TO DECISION-MAKING**
- **RESEARCH GAPS**

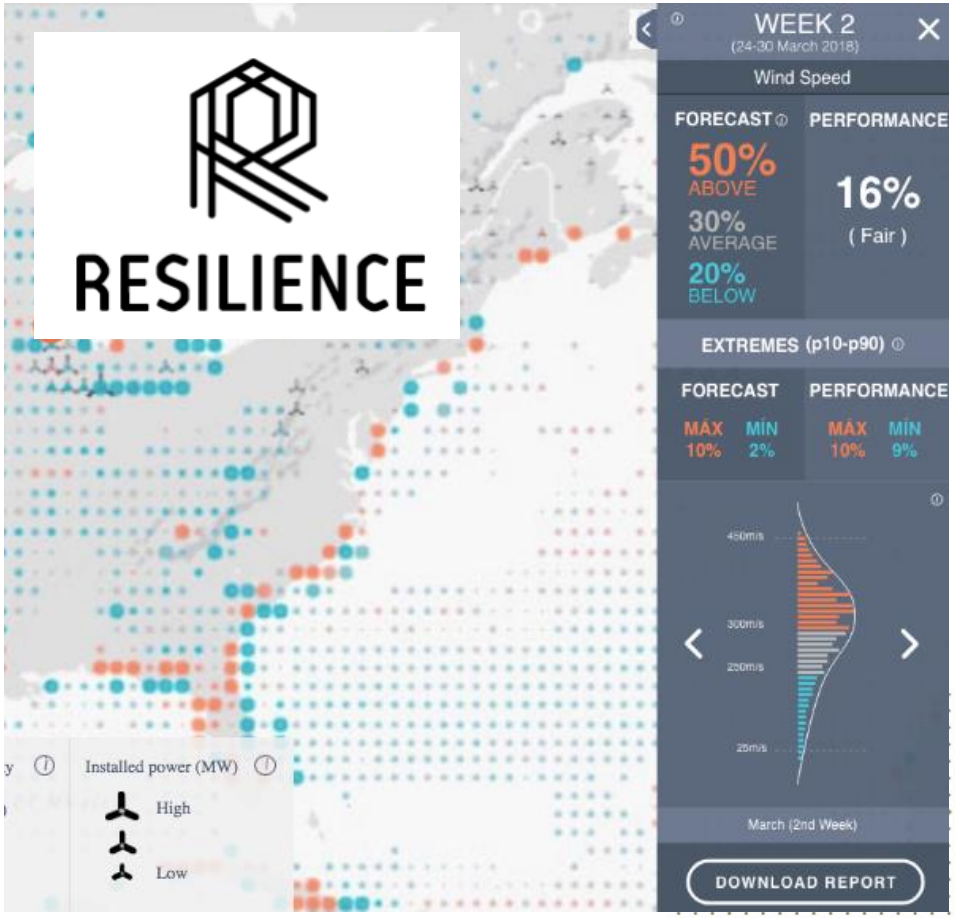
# Case studies




- Northern Europe affected by a mineral dust intrusion in April 2014
- Power prediction for German solar installations = **21 GW**
- Measured power production = **11 GW**
- Consequence: hourly price in the wholesale electricity market significantly affected. Prices first assessed of **27€/MWh** reached close to **150€/MWh**
- Affected the benefits of energy companies

# Online tool


http://www.project-ukko.net




https://ahv718.axshare.com

# Acknowledgements

*These projects have received funding from: the Horizon 2020 programme under grant agreements n° 776787 (S2S4E), 776467 (MED-GOLD), 730253 (VISCA), 689029 (Climateurope), 727862 (APPLICATE), 776613 (EUCP), 641811 (IMPREX); the European ERA4CS Joint Call as part ofthe DustClim project, and the Ministerio de Economía y Competitividad (MINECO) as part of the HIATUS project* CGL2015-70353-R and RESILIENCE project CGL2013-41055-R. *The content of this presentation reflects only the author's view. The European Commission is not responsible for any use that may be made of the information it contains.*

# Thanks!

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# Policy brief

# Policy brief

**Target → Policy-makers**

A policy brief presents a concise summary of information that can help readers understand and likely make decisions about government policies.

- Summarize relevant research
- Suggest possible policy options
- Argue for particular courses of action (possible extra step)

# Policy brief

## Structure

- Executive Summary;
- Context/scope of the problem;
- Policy alternatives (current policy approach + propose options);
- Policy Recommendations (suggest concrete steps).

- Identify policy levels (local, national, EU)
- Identify all stakeholders

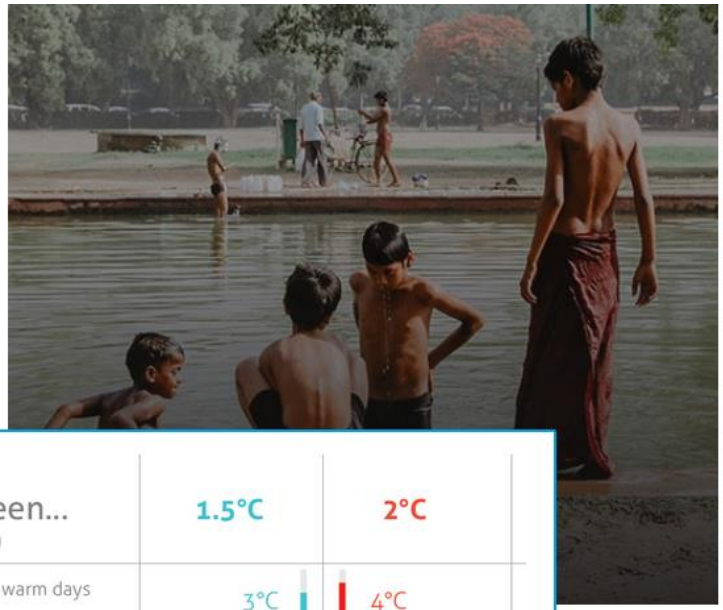
- Use evidence
- Be concise (not too short, missing out relevant info)
- Organize information effectively
- Use graphs, chats…
- Use frequent headings
- Brief explanation of technical concepts if mentioned
- Link to interesting sources

# Policy brief

## 3.

### EVERY HALF DEGREE MATTERS: LARGE DIFFERENCE IN IMPACTS BETWEEN 1.5°C AND 2°C DEGREES OF WARMING

- Significantly lower impacts on human health, living conditions, and natural ecosystems, when limiting global warming to 1.5°C instead of 2°C
- 1.5°C can now be considered a strongly preferable target for the planetary climate boundary



| Differences in ***impact*** between...<br>Impact of 1.5°C and 2°C, respectively (IPCC 2018) | 1.5°C | 2°C |
|---|---|---|
| Additional increase in temperature for extremely warm days on land at mid-latitudes (deg C) | 3°C | 4°C |
| Billion persons exposed to severe heat waves at least once per 5 years | 1 billion | 2.7 billion |
| Billion persons exposed to water stress | 3.3 billion | 3.7 billion |
| Land area projected to undergo a transformation of ecosystems from one type to another (million km²) | 9million km² | 17million km² |
| Species projected to lose over half of their range (%) | | |
| Vertebrate | 4% | 8% |
| Plant | 8% | 16% |
| Insect | 6% | 18% |
| Coral reefs experiencing long-term degradation (%) | 70-90% | >99% |
| Differences in ***mitigation***<br>Emissions reductions by 2030 (compared to 2010) | -45% | -20% |
| Year of ***zero net emissions*** | **2050** | **2075** |

https://briefs.futureearth.org/10-insights-2018/

# Policy brief

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMEN

OECD
BETTER POLICIES FOR BETTER LIVES

## Policy Brief

NOVEMBER 2015 www.oecd.org

# Three steps to a low-carbon economy

THE GOAL OF ZERO NET EMISSIONS CAN BE ACHIEVED

- **To limit the impact of climate change,** net greenhouse gas emissions must fall globally to zero by the end of the century.
- **Three policy approaches** are essential to meeting this goal:

  **We must strengthen** carbon pricing and remove fossil fuel subsidies;
  **We must remove barriers** to green investment; and
  **We must align policies** across the economy to leave fossil fuels behind as well as improve transparency on climate finance.

### What's the issue?

Fossil fuels account for around 81% of the energy we use. Despite the increasing focus on renewable sources of energy, the share of fossil fuels in the energy mix has changed little since the 1990s. But as well as supplying our energy needs, fossil fuels are also the major source of the carbon emissions that are fuelling climate change.

The legacy of human activity on the planet means that some level of climate change is now inevitable. But there is still time to limit the extent of the temperature rise to under 2°C, rather than the 3 to 5°C rise we are currently facing. For this to happen, we must achieve zero net greenhouse-gas emissions globally by the end of the century.

Reaching this goal will be challenging but by no means impossible. At the policy level it will require governments to disentangle their often contradictory approaches to climate change and energy. On the one hand, most governments are now committed to reducing carbon emissions. But, at the same time, many still subsidise fossil fuel producers and the use of coal and other fossil fuels. Many, also, are doing too little to encourage investment in alternative sources of energy and the rest of the green economy. Resolving these contradictions, and developing a genuine global partnership to fight climate change, are essential to getting to zero net emissions.

See: www.oecd.org/newsroom/photosandvideos/

Meeting climate goals will require stronger policies to cut emissions.

### Why is this important?

Unless governments take concerted action, fossil fuels will remain humanity's energy source of choice, contributing still further to the build-up of greenhouse gases. Despite the urgency of the challenge, policies in many countries continue to favour fossil fuels. Take coal: it is usually the least heavily taxed of all fossil fuels and is also generally subject to very low or no import tariffs. By contrast, renewable energy sources may be subject to import tariffs of at least 10%, and in some cases as high as 30%.

Unfortunately, there is often strong resistance to reducing our reliance on fossil fuels, with critics warning of risks to economic growth and competitiveness. However, there is little evidence that many of the steps essential for the transition to a low-carbon economy – such as subsidy reform and improving energy efficiency – pose any such threats. Equally, there is a high economic cost to doing nothing: research by the OECD suggests that, by 2060, climate change could reduce global GDP by between 1% and 3.3% a year.

A second challenge is posed by the extent to which our economies and societies remain deeply entangled with fossil fuel use and exploitation. For example, many government budgets and pension funds still rely heavily on returns from the coal and oil industries. Disentangling these linkages will require clear and predictable policies that ensure the true environment cost of fossil fuels is transmitted to producers and users.

### What should policy makers do?

The potential for making rapid cuts in carbon emissions is greater than many people realise. It can be made to happen if governments act quickly in three main policy areas: strengthen carbon pricing and remove fossil fuel subsidies; remove barriers to investment in the green economy; align policies across the economy – and not just in climate-related areas – and increase transparency on climate finance flows.

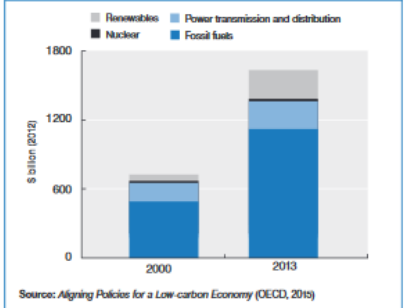
**Strengthen carbon pricing and cut fossil fuel subsidies:** Despite rising investment in renewables, we remain overly reliant on fossil fuels. In part, this is because the cost of fossil fuels to consumers does not reflect the environmental damage caused by these fuel sources. Equally, a range of subsidies, soft tax arrangements and investment allowances insulate producers from the true cost of extracting and using fossil fuels. While a gradually rising carbon price is necessary, there is an urgent need for governments to remove subsidies on fossil fuels to strengthen price signalling, both for producers and consumers. But with some notable exceptions, too few countries have taken action. Similarly, more needs to be done to introduce realistic carbon taxes. And while there has been progress on introducing emissions trading systems, allowance prices within these systems are generally too low.

**Remove barriers to investing in the green economy:** The underpricing of fossil fuels also serves as a barrier to investment in energy efficiency and renewable energy sources. For example, because the cost of pollution is not being accurately priced, fossil fuel projects appear more competitive than clean infrastructure projects. But there are other barriers to such investment. These include unpredictable policy and regulatory environments; market and regulatory arrangements that favour existing fossil fuel power generators; high financing costs; and barriers to international trade and investment, such as local-content requirements for solar and wind-energy projects. The need to tackle these policy shortcomings is urgent, especially in light of the opportunities for green investment that are opening up as existing power plants reach the end of their operating lives.

**Align policies across the economy and support climate finance:** The complex challenge of tackling climate change requires transformative domestic policies that build extensively on international trust and co-operation. Leaving fossil fuels behind implies change that will cut across every aspect of the economy. Tracking progress effectively is essential to providing a clear sense of whether or not carbon-pricing instruments and other policies to address greenhouse gas emissions are being implemented.

A major international effort is also needed to support climate change mitigation and adaptation in developing countries, many of which face particular risks from rising temperatures. Developed countries have committed to provide $100 billion a year by 2020 and have made significant progress towards meeting this goal: in 2014, climate finance reached an estimated $61.8 billion. That is encouraging, but it is also clear that a sustained effort will be needed to meet the 2020 goal.

**Carbon copy**
Global annual investment in energy supplies




Source: *Aligning Policies for a Low-carbon Economy* (OECD, 2015)

Investment in renewables as a source of energy has grown rapidly, but it is still dwarfed by investment in traditional fossil fuels.
Find out more at www.oecd.org/environment/cc/cop21.htm

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https://www.oecd.org/policy-briefs/Three-steps-to-a-low-carbon-economy.pdf