European Environment Agency
Webinars

Eionet webinars on resource efficiency policies

Webinar on Policy Mixes for Resource Efficiency

Thursday, 11 June 2015, 13:30 - 15:00 (CET)

FINAL WEBINAR REPORT (including agenda, background paper, presentations and participant list)

Prepared by:

Bettina Bahn-Walkowiak (Wuppertal Institute)
European Topic Centre on Waste and Materials in a Green Economy

ETC/WMGE 2.1.1.d Task Manager:
Arkaitz Usubiaga (Wuppertal Institute)

EEA project manager:
Paweł Kaźmierczyk

Documents, presentations and video recordings from all webinars on resource efficiency are available on the Eionet Forum: http://forum.eionet.europa.eu/nrc-scp-waste/library/eionet-webinars/webinars-resource-efficiency

Documents – including presentations and video recording – from the webinar on 11 June 2015 on policy mixes for resource efficiency are available at: http://forum.eionet.europa.eu/nrc-scp-waste/library/eionet-webinars/webinars-resource-efficiency/6-webinar-policy-mixes-resource-efficiency

Contents

1 Objectives of the webinar

Webinars on resource efficiency policies and instruments, initiated in 2012, are organized by the European Environment Agency for the Eionet network, to support exchange of information and sharing of experience among national institutions which are responsible for practical implementation of resource efficiency policies at the country level.

The main objectives of these webinars are to keep countries informed about ongoing and upcoming EU policy initiatives, and to provide a forum where countries themselves can present examples of policy initiatives which they adopt and carry out under the heading of resource efficiency.

Previous webinars covered such topics as: national strategies for resource efficiency; targets and indicators; industrial symbiosis; circular economy; RMC and European target on resource productivity; and decoupling.

In an effort to tackle inefficient and wasteful use of natural resources, the European Union has named resource efficiency as one out of seven flagship initiatives under its so-called Europe 2020 strategy, which means the EU considers resource efficiency a top policy priority (European Commission 2010). The "Roadmap to a Resource Efficient Europe" (European Commission 2011b) describes a vision of an economy in the European Union in 2050, which is competitive and inclusive and has a high standard of living but grows economically in a way that the scarcity of resources and the limits of the planet are respected. In 2014, the European Resource Efficiency Platform published a Manifesto with policy recommendations further encouraging action in Member States to implement effective policies.

The 7th Environment Action Programme (EAP), adopted in 2014, will be guiding European environment policy until 2020. It sets out a long-term vision for the EU:

> *"In 2050, we live well, within the planet's ecological limits. Our prosperity and healthy environment stem from an innovative, circular economy where nothing is wasted and where natural resources are managed sustainably, and biodiversity is protected, valued and restored in ways that enhance our society's resilience. Our low-carbon growth has long been decoupled from resource use, setting the pace for a safe and sustainable global society."*

However, development and implementation of policies to support resource efficiency and in particular, application of mixes of various policy instruments which, when combined in a synergistic way improve resource efficiency, are at a fairly early stage. While there is no lack of innovative ideas for instruments that could mutually reinforce each, their implementation is rather scattered and dissemination limited.

The topic of how to develop and design policy mixes for resource efficiency, and the question if there already are successful policy mixes which could illustrate benefits of combining various forms of policy intervention, have recently started to attract the attention of policymakers and researchers, especially with regard to the selection of instruments, the process of formulation, and priorities to be considered.

The goal of the webinar on 11 June 2015 is to share with the Eionet the concept of policy mixes for resource efficiency (drawing on the results of two dedicated multi-annual research projects, DYNAMIX and POLFREE, initiated by the European Commission), and to explore the conditions and benefits from combining various policy instruments to achieve improved resource efficiency.

The webinar will begin with an introduction by Dr. Martin Hirschnitz-Garbers from Ecologic Berlin and Dr. Henning Wilts from the Wuppertal Institute for Climate, Environment, Energy, who will present selected findings from DYNAMIX and POLFREE – two large multiannual projects funded by the European Commission to explore, to learn from and to stimulate use of successful policy mixes for resource efficiency. This will be followed by a policy update by Ms. Bettina Kretschmer, DG Environment, concerning recent and upcoming initiatives in Brussels, as well as a short reflection on the rationale for policy mixes for resource efficiency. The keynote presentation on resource efficiency policy mixes in action will be given by Professor Paul Ekins from Universtity College London, who will discuss potential economic opportunities of resource efficiency policy mixes for jobs and growth and the lessons learned from experiences in the United Kingdom.

The upgraded version of Webex webinar software which we use allows up to 100 participants to take part, and while priority is given to Eionet participants, non-Eionet participants will also be able to register. To participate in the webinar, you need a computer with a fast internet connection, and equipped with a microphone and speakers (or a headset).

To register for the webinar, please sign up / provide your contact details at:

https://docs.google.com/document/d/1kW5iK9nw5Z6_aokae58BpxG0XCG3YcU-9sEnWdox7YE/edit

Detailed joining instructions will be sent to registered participants on 10 June 2015. They are also included at the end of this document.

2 Introduction to Policy Mixes for Resource Efficiency

2.1 Policy context

The Europe 2020 Strategy defines milestones for the EU to become a smart, sustainable and inclusive economy (European Commission, 2010). The strategy is built around seven mutually reinforcing flagship initiatives, one of which has resource efficiency at its core (European Commission, 2011a). As a follow up to this flagship initiative, the Commission adopted the Roadmap to a Resource Efficient Europe in order to set a framework for action that would pave the way towards an EU smart, sustainable and inclusive economy that by 2050 has grown in a way "that respects resource constraints and planetary boundaries, thus contributing to global economic transformation" (European Commission, 2011b, p. 3).

Under the headline "Transforming the economy" the EU Roadmap describes four major guidelines and milestones:

- By 2020, citizens and public authorities have the right incentives to choose the most resource efficient products and services and market and policy incentives that reward business investments in efficiency are in place - **Sustainable consumption and production**
- By 2020, waste is managed as a resource - **Turning waste into a resource**
- By 2020 scientific breakthroughs and sustained innovation efforts have dramatically improved how we understand, manage, reduce the use, reuse, recycle, substitute, safeguard and value resources - **Supporting research and innovation**
- By 2020, Environmentally harmful subsidies will be phased out and a major shift from taxation of labour towards environmental taxation will lead to substantial share of environmental taxes in public revenues **- Environmentally harmful subsidies and getting the prices right** (EC 2011).

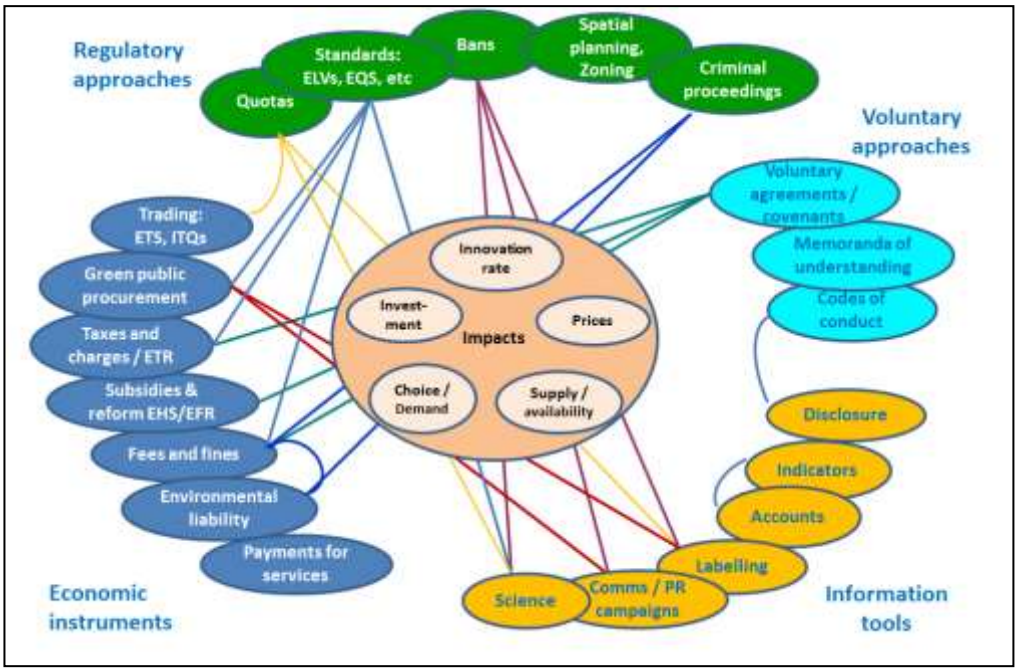
The 7th Environment Action Programme also highlighted the role which resource efficiency should play in this transformation by including it in one of its thematic priorities, namely to turn the Union into *"a resource-efficient, green and competitive low-carbon economy."* The other two key objectives are to protect, conserve and enhance the Union's natural capital; and to safeguard the Union's citizens from environment-related pressures and risks to health and wellbeing. (European Commission, 2014a).

2.2 Why focus on policy mixes for resource efficiency?

The prevailing approach to resource policy is that stand-alone and often rather weak strategies and a conglomerate of different sector-specific and/ or technology-driving instruments and policies as well as selective policies for innovation and green innovation confront complex socio-technical resource supply and consumption systems. Indeed, individual instruments are increasingly implemented quite effectively and successfully (e.g. governmental loan programmes for energy efficiency investments in buildings). Then, successful instruments gain a relative diffusion in Europe as 'good practices' (e.g. feed-in tariffs) and thus lead to stronger effects. This sometimes also relates to instruments that are controversial concerning their environmental purpose (e.g. car scrappage schemes). On the other hand, some effective instruments are lose their former legitimacy in the wake of political changes and parliamentary terms or they are successfully challenged by interest groups (e.g. ecological tax reforms).

Hence, more and more policies aim to combine the dynamics of innovation for resource efficient practices with a targeted support for eco-technologies. Those policies are assumed to have advantages in achieving economic objectives and increasing resource efficiency, by being a fusion point of innovation and environmental policies. Incentive instruments and programmes are established but they are often focused in the field of energy. Policies aiming to influence the resource use, e.g. targets, market-based instruments, innovation and technology driving instruments, informational instruments and information transfer show a broad range of hundreds of different environmental protection and resource efficiency policies across the EU32, frequently tailor-made for national needs. The EEA report (2011), for example, reports 190 examples presented by countries as good practices for resource efficiency.

Figure 1: Potential policy landscape: instrument classification and interlinkages



Source: Fedrigo-Fazio et al. 2014 (DYNAMIX project), p. 22

Resource efficiency policy has to be seen as a prototype of a "multi-aspect problem" that requires a targeted mix of different instruments. There is no single policy tool that would be able to effectively address the different problem structures, goals, actors, kinds of resources, etc. associated with the consumption of raw materials. In contrast to single instruments, policy mixes are composed of several elements such as targets and market-based and/or information-based incentives for research and innovation, diffusion or market introduction of resource-efficient technologies or products.

They have to be designed under a given framework or under changing conditions, while—ideally—focusing on the country-specific opportunities and the participation of the relevant stakeholders and actors at the same time. It has to overcome barriers, be aware of separate innovation stages, and respond to future global challenges. It is further important in this context that strategies and planning processes are different for resource extracting/ exporting and resource importing countries. They are subject to country-specific resource and economic priorities, while support from other countries can be needed for technology and knowledge transfer and capacity building.

2.3 Policy approaches

Drawing on the examples from two on-going research projects called “Policy options for a resource efficient Europe” (POLFREE) and “DYNAmic policy MIXes for absolute decoupling of environmental impacts of EU resource use from economic growth” (DYNAMIX), this webinar aims to introduce to the issue and to arouse interest and foster cross-country dialogue.

2.3.1 DYNAMIX

As part of the DYNAMIX project's ex-post analyses, case studies for evaluation of successful policies towards decoupling of resource use (ranging from abiotic resources, including minerals, metals, and fossil fuels; biotic resources, including timber, fish, to environmental media and the ecosystem services linked to them: land, air) were analysed. In order to inform the selection of promising policy mixes for absolute decoupling, a total of 15 case studies were undertaken in the project (Mazza et al. 2013).

A next step was a comparative analysis of policy mixes addressing natural resources in order to assess whether the mixes have achieved an absolute decoupling within resource limits, an absolute decoupling, a relative decoupling, no decoupling or whether the results are unclear at present (Fedrigo-Fazio et al. 2014).

The project then developed three initial policy mixes designed within three different policy areas to address absolute decoupling in general and, specifically, the use of virgin metals, the use of arable land and freshwater, the input of the nutrients nitrogen and phosphorus, and the emissions of greenhouse gases. These policy mixes aim to address (a) land use, (b) metals and other materials and (c) has an explicit overarching design including :

- Taxes on the extraction of selected virgin materials and on landfilled and incinerated waste.
- Feebate schemes for selected products.
- Reduced value-added tax (VAT) for the most environmentally advantageous products and services.
- Boost of the extended producer responsibility.
- Skill enhancement programme.
- Local currencies for labour-based services.
- Enabling a shift from consumption to leisure.
- Step-by-step restrictions of advertising and marketing.
- Minimum requirements on the life-cycle performance of products.
- Compulsory sustainability reporting for companies. (Ekvall et al. 2015).

2.3.2 POLFREE

A crucial precondition of an efficient policy mix is the inner consistency of a set of instruments and the coherence with overall goals. This also relates to the coordination of new instruments with environmental policies in place and the coordination with related policies like financing, R&D, procurement, investments etc. The links to recycling, the recovery of resources and a circular economy are obvious as waste instruments have to be an integral parts of those policy mixes (Bahn-Walkowiak, von Gries, Wilts 2014).

The possibilities to go beyond single instruments and integrate them into a consistent and coherent policy mix with relevant synergies between its single elements were explored in the POLFREE project. Specific instrument design features are most influential for innovation processes and synergies, but

also contrary effects and trade-offs between specific instruments are important as well as a congruency with the policy targets are most relevant for the construction of policy mixes.

A series of innovative instruments (or innovative adaptations of existing instruments) was described in detail and analysed with regard to their potential impacts and their interactions. The instruments representing the most relevant fields of action as to resource consumption and resource efficiency potentials were analysed as a potential policy mix in the following configuration:

1) Minimization of food waste losses alongside the value chain/ Changing diets
2) Zero Energy and material efficient buildings
3) Fuel efficient mobility
4) Electricity production and distribution
5) Industrial symbiosis network
6) Product Service Systems
7) Ecodesign Product Standards for a Circular Economy
8) Phasing out EHS
9) Internalization of costs

The character of resource efficiency as a cross-cutting policy approach becomes evident: The more promising specific instruments seem, the more actors have to be involved in its development and implementation. This often requires complex coordination between different policy fields, e.g. in the field of food waste prevention between agriculture, industrial food processing, retailers and consumer policy. Despite the obvious potential environmental and economic benefits, high transaction costs of coordination are a powerful barrier. New platforms of coordination but also improved framework conditions for promising niche developments will be necessary in order to boost the uptake of existing technological and social innovations for resource efficiency alongside value chains (Wilts et al. 2015).

At the following links you will find more information about project results on policy mixes:

POLFREE: https://www.ucl.ac.uk/polfree/publications

DYNAMIX: http://dynamix-project.eu/results

References

Bahn-Walkowiak, B., von Gries, N., Wilts, H., Schefer, S., 2014. Comparing trends and policies of key countries: Report about drivers for resource decoupling and the role of national policies. Deliverable D1.3 within the POLFREE project. London, University College.

Ekvall, T., Elander, M., Umpfenbach, K., Hirschnitz-Garbers, M., Hudson, C., Wunder, S., et al. 2015. Development of DYNAMIX Policy Mixes. D4.2. within the DYNAMIX project, Berlin, Ecologic Institute.

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European Resource Efficiency Platform, 2014. Manifesto & Policy Recommendations.
Fedrigo-Fazio, D., Mazza, L.,ten Brink, P., Watkins, E. 2014. Comparative analysis of policy mixes addressing natural resources, D.3.2 within DYNAMIX, Berlin, Ecologic Institute.
Mazza, L., Fedrigo-Fazio, D., Withana, S., Faria Lopes, A. 2013. Evaluating existing policy mixes to identify solutions for EU resource efficiency - Summary report of 15 real world policy mix evaluations.
Wilts, H., von Gries, N., Bahn-Walkowiak, B., O'Brien, M., Busemann, J., Domenech, T., Bleischwitz R., Dijk, M. 2014. Policy Mixes for Resource Efficiency, D2.3 within Policy Options for a Resource-Efficient Economy (POLFREE), London, University College.

3 The Speakers

Prof. Dr. Paul Ekins, Professor of Resources and Environmental Policy at and Director of the UCL Institute for Sustainable Resources, University College London, member of UNEP's International Resource Panel, former Chairman of the UK government-funded National Industrial Symbiosis Programme (NISP), a consultant to the Government's Sustainable Development Commission.

Email: Paul Ekins p.ekins@ucl.ac.uk

Dr. Martin Hirschnitz-Garbers, Senior Fellow at Ecologic Institute and Coordinator of Resource Efficiency. He works on analysing policies concerning the decoupling of resource use and economic growth, on evaluating resource policy and on fostering sustainable resource management towards a Circular Economy; project coordinator DYNAMIX

Email: Martin Hirschnitz-Garbers martin.hirschnitz-garbers@ecologic.eu

Ms. Bettina Kretschmer, DG Environment, European Commission. Socio-Economic Analyst at DG Environment, European Commission, Bettina works on implementing the EU's Resource efficiency agenda, including financing aspects and policy development in the field of the circular economy, as well as on economic and environmental assessment in relation to energy, climate and land use policies.

Email: Bettina Kretschmer Bettina.KRETSCHMER@ec.europa.eu

Dr. Henning Wilts, project coordinator at the Wuppertal Institute for Climate, Environment and Energy, research group on Material Flows and Resource Management; coordinates several research projects on transition processes towards a circular economy, waste prevention and resource efficiency policies.

Email: Henning Wilts henning.wilts@wupperinst.org

4 Webinar Agenda

Webinar on Policy Mixes for Resource Efficiency
Thursday 11 June 2015, 13:30 - 15:00 (CET)

Webinar IT platform will be open for joining at 13:00 (CET) - to log in please follow the instructions in the next section

Policy Mixes for Resource Efficiency - Policy context	
13:30	• **Welcome, introduction and technical briefing** by Paweł Kaźmierczyk (EEA) and Bettina Bahn-Walkowiak (ETC/WMGE)
13:40 **–** **14:10**	• **Why focus on mixes of policy instruments for resource efficiency? An introduction** by Dr. Martin Hirschnitz-Garbers (Ecologic Institute) and Dr. Henning Wilts (Wuppertal Institute) Joint presentation of selected findings from DYNAMIX and POLFREE – two large multiannual projects funded by the European Commission to explore, to learn from and to stimulate use of successful policy mixes for resource efficiency. *(20 min presentation + 10 min Q&A)*
14:10 **–** **14:30**	• **A new EU Strategy: The Circular Economy** Policy update from the European Commission on recent developments and upcoming EU initiatives on resource efficiency, and reflections on the rationale for policy mixes for resource efficiency. by Ms. Bettina Kretschmer, DG Environment *(15 min presentation + 5 min Q&A)*
Key note presentation: Resource Efficiency Policy Mixes in action	
14:30 **–** **15:00**	• **A Green Economy for Europe: Costs, Benefits, Opportunities and Policies** Presentation by Prof. Dr. Paul Ekins; University College London, Member of the International Resource Panel *(20 min presentation + 10 min Q&A)*
Wrap up and closing	
15:00	**Wrap-up** by Paweł Kaźmierczyk (EEA)

5 Presentations

5.1 Introduction: why focus on mixes of policy instruments for resource efficiency - by Martin Hirschnitz-Garbers and Henning Wilts

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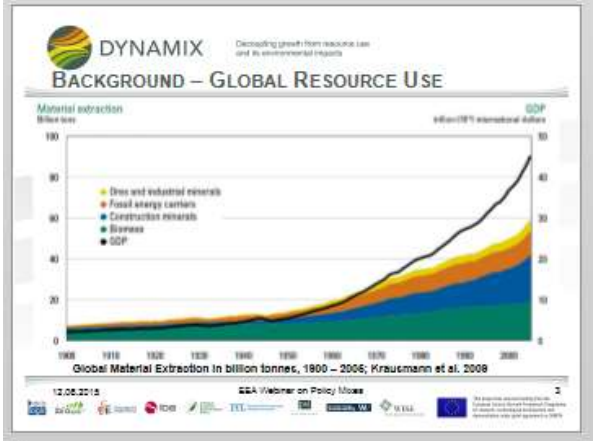

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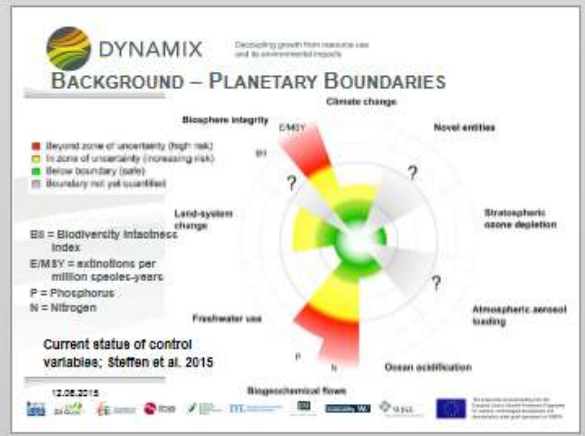

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DYNAMIX

Where to Start? Identifying Intervention Points

- Relevant drivers – "any natural or human-induced factor that directly or indirectly influences the efficient (or inefficient) use of resources" *(MEA 2005)*
- Relevant barriers – factors that obstruct or impede sustainability changes

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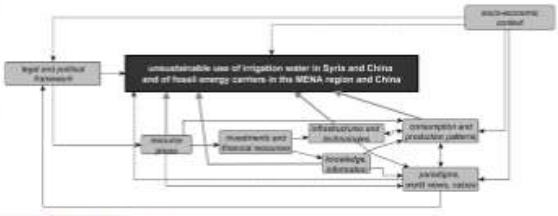
DYNAMIX

Drivers as Intervention Points



direct effects (grey solid arrows) ⟶
indirect effects (black dashed arrows) ⇢
(based on *Hirschnitz-Garbers et al. 2015*)

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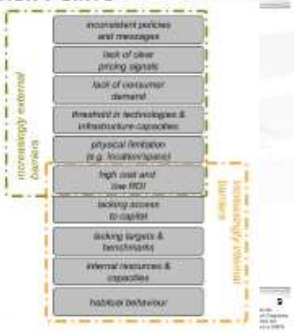
DYNAMIX

Barriers as Intervention Points

Barriers for improving business resource efficiency



adapted from AMEC and BIO (2013)

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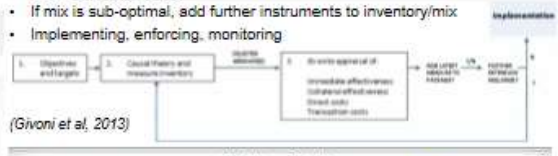
DYNAMIX

Conceptualising Policy Mixes

- Definition of objectes and setting of targets
- Elaborating a causal theory/heuristic for problem solving and inventorising potentially relevant instruments => measure inventory
- Selecting promising measures and ex-ante appraisal (anticipation, mental models, Scenarios, modelling and simulation, etc.) of effectiveness, direct and transaction costs
- If mix is sub-optimal, add further instruments to inventory/mix
- Implementing, enforcing, monitoring



(Givoni et al, 2013)

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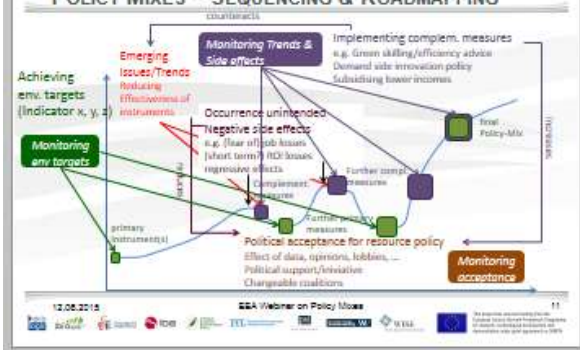
DYNAMIX

Policy Mixes – Sequencing & Roadmapping



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Policy mixes for RE

- What kind of policy framework is needed to boost resource efficiency in Europe and leads to total reduction of both primary resource use and global environmental burdens?

➢ a policy-mix that (a) optimises synergies and addresses trade-offs between different areas and policies and (b) stimulates pro-active approaches by business in potential lead markets.

12 | Wuppertal Institut

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RE Policy mix case studies

Identification of key topics for RE, based on the POLFREE vision for Europe 2050 and intensive discussions with stakeholders:

1) Minimization of food waste losses alongside the value chain
2) Zero energy and material efficient buildings
3) Mobility
4) Electricity production and distribution
5) Industrial symbiosis network
6) Product Service Systems
7) Ecodesign Product Standards for a Circular Economy
8) Phasing out EHS
9) Internalization of costs

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RE Policy mix case studies

The transition towards a Circular Economy – expectations could not be higher: e.g. annual cost savings of more than 500 Mio. Euro (EMF 2013).

The concept of policy mixes helps to identify key obstacles and trade-offs:

Consistency:
- Waste prevention vs recycling as job motor
- Closing material loops vs incineration

Coherence: Europe as a recycling society vs national waste autharchy

Credibility: The ups and downs of the Circular Economy Package

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RE Policy mix case studies

If resource efficiency and the circular economy are win-win concepts, why don´t we see faster progress?

- The more ambitious an instrument, the lower the immediate profitability for the actors involved
- Trade-off between the predictability of an instrument and its flexibility
- Trade-off between the level of specificity of an instrument and its depth, the level of inclusions of up- and down stream actors

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RE Policy mix case studies

(1) Setting incentives for a more resource efficient product design by ***individual responsibility of producers***

(2) Specific ***eco-design requirements*** that make reuse and repair of products economically viable

(3) Establishment of ***waste targets that focus on the production of high quality secondary resources – recycled content quota***

➢ Policy mix is not just picking the right instruments, it is the *"art of timing, combining, and sequencing instruments to meet multiple goals amidst changing circumstances" (Sterner & Coria 2012)*

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DYNAMIX

Decoupling growth from resource use and its environmental impacts

POLFREE

THANK YOU VERY MUCH!

Dr. Martin Hirschnitz-Garbers, Ecologic Institute
martin.hirschnitz-garbers@ecologic.eu

Dr. Henning Wilts, Wuppertal Institute
henning.wilts@wupperinst.org

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DYNAMIX

Decoupling growth from resource use and its environmental impacts

12.06.2015 | 1st DYNAMIX Policy Platform | 18

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5.2 The new EU Strategy: Circular Economy – by Bettina Kretschmer

2014 Circular Economy Package

- Umbrella Communication (July 2014)
  "Towards a circular economy:
  A zero waste programme for Europe"
- Green Employment Initiative
- Green Action Plan for SMEs
- Communication on Sustainable buildings

⇔ Waste legislative proposal: withdrawn in Feb 2015

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A new Circular Economy Strategy

A revised **legislative proposal** on waste
+ a Communication setting out an **action plan**

✓The whole value chain
✓Concrete measures with clear EU added value
✓Fully compatible with the jobs and growth agenda

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Areas for intervention

Extraction & production processes	Mining & industrial waste: > 50% of waste generated in EU
Product design	Product design → longevity, re-use, remanufacturing, recycling, recovery
Distribution and consumption	Consumers choices ⇔ confusing information
Waste	Waste = resource = source of secondary raw materials *OR* energy

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Next steps

- Reflection on the proposal involving all relevant Commission services
- Public consultation (28.05 → 20.08)
- Stakeholder conference on June 25
- New, more ambitious proposal by end 2015

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Public consultation – structure

1) **Production** phase (production and sourcing of materials, product design)
2) **Consumption** phase
3) Markets for **secondary raw materials**
4) Sectoral measures (i.e. which **sectors** to prioritise and through which measures?)
5) **Enabling factors**, incl. innovation and investment

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3.1. How would you assess the importance of the following measures to promote circular economy principles in product design at EU level?

	very important	important	not very important	not important	no opinion
Establish binding rules on product design (e.g. minimum requirements on 'durability' under Ecodesign Directive 2009/125/EC)	○	○	○	○	○
Encourage industry-led initiatives (i.e. self-regulation)	○	○	○	○	○
Develop standards for voluntary use	○	○	○	○	○
Promote and/or enable the use of economic incentives for eco-innovation and sustainable product design (e.g. via rules on Extended Producer Responsibility schemes)	○	○	○	○	○
Review rules on legal and commercial guarantees	○	○	○	○	○
Encourage the consumption of green products (see section 4)	○	○	○	○	○

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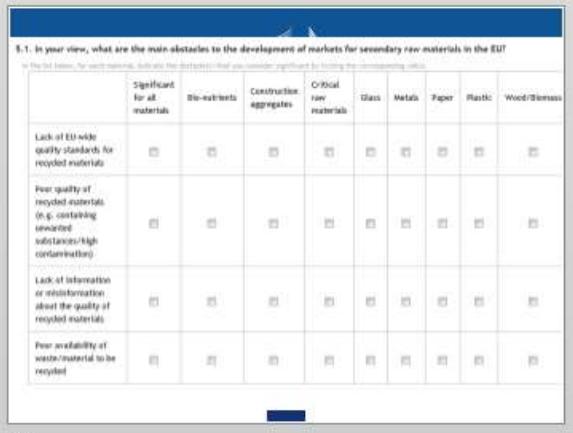
5.1. In your view, what are the main obstacles to the development of markets for secondary raw materials in the EU?
Significant for all materials
Bio-nutrients
Construction aggregates
Critical raw materials
Glass
Metals
Paper
Plastic
Wood/Biomass
Lack of EU-wide quality standards for recycled materials
Poor quality of recycled materials (e.g. containing unwanted substances/high contamination)
Lack of information or misinformation about the quality of recycled materials
Poor availability of waste/material to be recycled

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Reflection on policy mixes
• Resource efficiency policy a "multi-aspect problem" requiring a "mix of different instruments"
• Public consultation set up in this spirit
• Circular Economy package to target different stages of the product lifecycle…
• … by different types of measures

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CIRCULAR ECONOMY
saving resources, creating jobs
Thank you for your attention!
http://ec.europa.eu/environment/circular-economy/index_en.htm
bettina.kretschmer@ec.europa.eu

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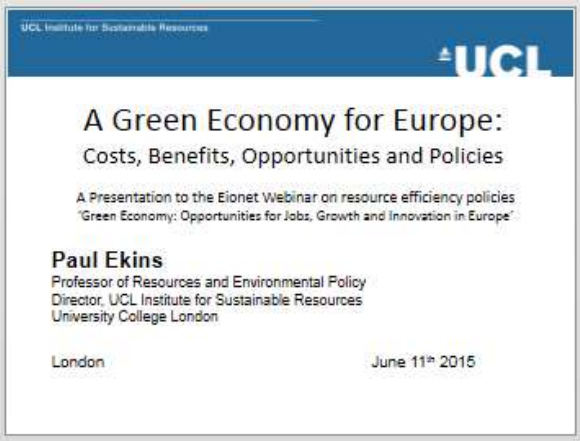
5.3 A green economy for Europe – by Paul Ekins



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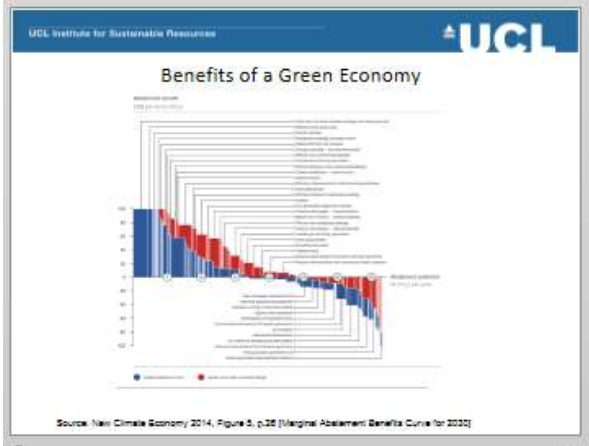

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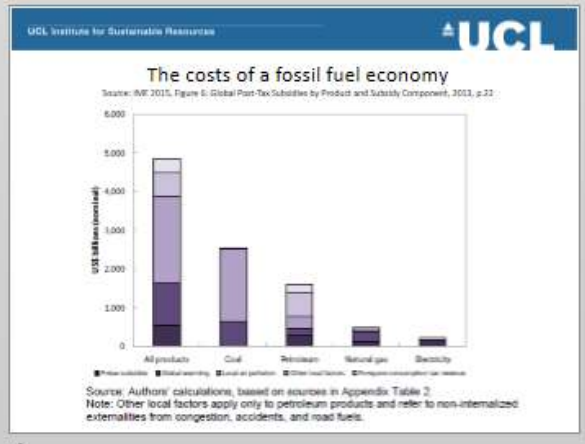

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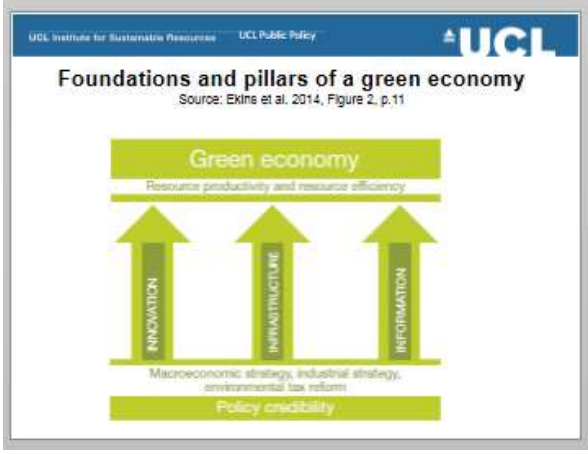

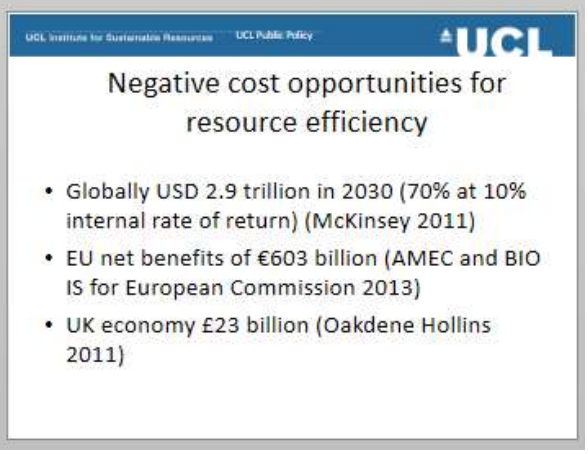

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National Industrial Symbiosis Programme (NISP)

NISP outputs (investment £28m over 5 years)

5-year figures = 60% attribution and 20% annual persistence decay

	Actual	5 years	Public investment/ unit output
Landfill diverted (mt)	7.0	12.6	0.31 (£/t)
CO_2 reduction (mt)	6.0	10.8	0.36 (£/t)
Virgin materials saved (mt)	9.7	17.5	0.23 (£/t)
Hazardous materials reduced (mt)	0.36	0.7	6.04 (£/t)
Water saved (mt)	9.6	17.2	0.23 (£/t)
Extra sales (£m)	176	317	0.012 (£/£)
Costs saved (£m)	156	281	0.014 (£/£)
PLUS			
Extra Government revenue (£m)		89	0.31 (£/£) Fiscal multiplier: 3.2 (£/£)
Private investment (£m)	131		
Jobs created	3683		
Jobs saved	5087		

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The EU needs a green economy

- Europe is the continent most dependent on raw material imports, in competition with 9 billion people (by 2050), 3 billion new middle class consumers (by 2030), the 'nexus' of inter-related concerns around food, water, energy, climate (and biodiversity), plus 'critical' raw materials
- In this context resource efficiency is an imperative

- Resource Efficiency: RMC Study
  Study on Modelling of the Economic and Environmental Impacts of Changes in RMC (DG Environment, European Commission, 2013)
- *"To assess the economic, social and environmental impacts of alternative policy packages to improve European resource productivity (RP), as measured by Raw Material Consumption (RMC) per unit of GDP"*
- Model used: Cambridge Econometrics' E3ME

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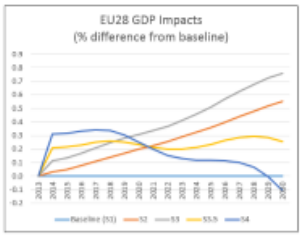
Macroeconomic Impacts



Overall resource productivity improvement between 2014 and 2030

Scenario	Description	Approximate improvement (2014 - 30)

e3me

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Findings of European Commission study

Source: Study on Modelling of the Economic and Environmental Impacts of Changes in RMC (DG Environment, European Commission, 2013)

- Absolute decoupling of material consumption is possible
- Cutting down resource consumption helps boost EU28 GDP by
  - promoting resource and energy efficiency R&D investment
  - reducing EU dependency on raw material imports
  - boosting household income by using tax revenues to reduce other tax rates
- Two million additional jobs in the EU could be created in S3
  - from higher investment and reduction in labour costs
- Beyond RP improvement of 2%pa (S3) improvement options are becoming more expensive

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Estimating the macro-economic cost of increasing resource productivity

- Models are essential to integrate cost data in a representation of
  - The economy: macro-econometric/general equilibrium models
  - Good models are 'garbage in – garbage out'; need to get the inputs right
- Model results depend on three crucial factors:
  - *The robustness of the model structure*. The model should be theoretically sound, well represented in the scientific literature, and based on robust data.
  - *The plausibility of the input assumptions*. The input assumptions should be plausible.
  - *The quality of the data*. The data should be recent, and come from expert, independent sources, generated in the main by official agencies or engineering consultancies on official contracts.

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Macroeconomic modelling issues

- Major issues with macroeconomic modelling
  - **Lack of representation of environmental damage, so that baselines lack credibility and climate change mitigation nearly always shows up as costs (unless it is possible to correct other economic distortions [e.g. through reducing labour taxation])**
  - Inadequate representation of innovation processes
  - Standard CGE representation of full employment (not so in macro-econometric models, e.g. MDM-E3, GINFORS)

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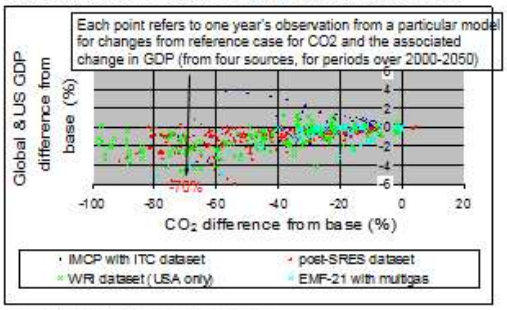
Scatter plot of model cost projections, 2000-2050



- Source: Barker et al. 2006 (cited in Stern 2007, p.270).

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Projections from the 2011 UNEP Green Economy Report

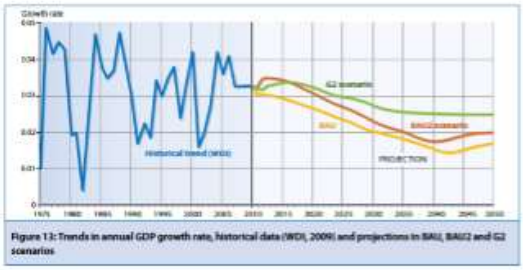

Figure 13: Trends in annual GDP growth rate, historical data (WDI, 2009) and projections in BAU, BAU2 and G2 scenarios

Source: UNEP 2011, Figure 13, p.519

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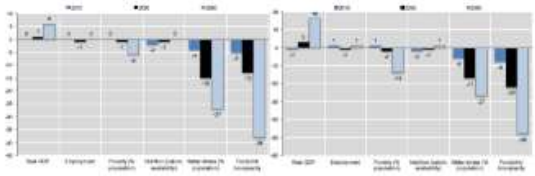
Projections from the 2011 UNEP Green Economy Report

RESULTS OF GREEN 1 AND 2 SCENARIOS AGAINST BUSINESS-AS-USUAL



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Conclusions on moving towards a green economy in the EU

- Negative cost opportunities for resource efficiency
- Innovation and investment: new technology, economic activity, exports
- Increased resource security (reduced vulnerability): food, water, energy, rare materials
- Increased welfare from environmental improvement: reduced GHG emissions and air pollution, waste to landfill, extraction of virgin materials
- International credibility, and exports, as the global community gradually goes in the same direction
- None of these benefits can be achieved without government intervention to provide massively increased information through a new knowledge infrastructure, and incentives and regulation to guide innovation in the direction of greater resource productivity

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Thank you

p.ekins@ucl.ac.uk
www.bartlett.ucl.ac.uk/sustainable

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6 List of registered participants

https://docs.google.com/document/d/1kW5iK9nw5Z6_aokae58BpxG0XCG3YcU-9sEnWdox7YE/edit

#	Name	Email address	Organization	Country
1	Hubert Reisinger	Hubert.Reisinger@umweltbundesamt.at	Umweltbundesamt Austria	Austria
2	Bettina Kretschmer	Bettina.KRETSCHMER@ec.europa.eu	DG Environment, European Commission	Belgium
3	Jan Hendrik Voet	voet@irceline.be	National Focal Point IRCEL-NFP	Belgium
4	Theo Geerken	theo.geerken@vito.be	VITO, Flemish Institute for Technological Research	Belgium
5	Yirka Beeckman	beeckman@irceline.be	NFP Belgium	Belgium
6	Lieze Cloots	lcloots@ovam.be	OVAM, Public Waste Agency of Flanders	Belgium
7	Marc Leemans	mleemans@ovam.be	OVAM, Public Waste Agency of Flanders	Belgium
8	Mirza Agić	mirza.agic@bhas.ba	Agency for Statistics of Bosnia and Herzegovina	Bosnia and Herzegovina
9	Andrea Muharemović	andrea.muharemovic@fmoit.gov.ba	Federal Ministry of Environment and Tourism	Bosnia and Herzegovina
10	Mira Zovko	mira.zovko@azo.hr	Croatian Environment Agency	Croatia

#	Name	Email address	Organization	Country
11	Meropi Miliotou	mmilioti@environment.moa.gov.cy	Department of Environment	Cyprus
12	Vojtěch Pilnáček	Vojtech.Pilnacek@mzp.cz	Ministry of the Environment	Czech Republic
13	Vladimír Dobeš	dobesvladimir@gmail.com	Platform for SCP EMPRESS	Czech Republic
14	Pavel Ruzicka	pavel.ruzicka@empress.cz	EMPRESS	Czech Republic
15	Jiri Valta	jiri.valta@cenia.cz	CENIA, Czech Environmental Information Agency	Czech Republic
16	Marco Veneziani	marco.veneziani@eea.europa.eu	European Environment Agency	Denmark
17	Pawel Kazmierczyk	pawel.kazmierczyk@eea.europa.eu	European Environment Agency	Denmark
18	Simona Losmanova	simona.losmanova@eea.europa.eu	EEA	Denmark
17	Kasper Dirckinck-Holmfeld	kadir@plan.aau.dk	Aalborg University Copenhagen, Department of planning	Denmark
20	Mihkel Krusberg	Mihkel.Krusberg@envir.ee	Ministry of the Environment	Estonia
21	Doris Nicklaus	doris.nicklaus@developpement-durable.gouv.fr	Ministry for Ecology, sustainable development and Energy	France
22	Lowri Angharad Rees	lowri.rees@unep.org	United Nations Environment Programme - International Resource Panel	France

#	Name	Email address	Organization	Country
23	Martin Hirschnitz-Garbers	martin.hirschnitz-garbers@ecologic.eu	Ecologic Institute	Germany
24	Henning Wilts	henning.wilts@wupperinst.org	Wuppertal Institute	Germany
25	Arkaitz Usubiaga	arkaitz.usubiaga@wupperinst.org	Wuppertal Institute	Germany
26	Nora Brüggemann	nora.brueggemann@scp-centre.org	CSCP	Germany
27	Francesca Grossi	francesca.grossi@scp-centre.org	CSCP	Germany
28	Bettina Bahn-Walkowiak	bettina.bahn-walkowiak@wupperinst.org	Wuppertal Institute for Climate, Environment, Energy	Germany
29	Stefan Werland	stefan.werland@fu-berlin.de	Freie Universitaet Berlin	Germany
30	Martin Gsell	m.gsell@oeko.de	Öko-Institut e.V.	Germany
31	Petra Péntek	petra.pentek@fm.gov.hu	Ministry of Agriculture	Hungary
32	Tamas Kallay	tkallay@rec.org	REC	Hungary
33	Anna Ragnarsdottir	anna.ragnarsdottir@ust.is	Icelandic Environment Agency	Iceland
34	Madara Šinke	madara.sinke@varam.gov.lv	Ministry of Environmental Protection and Regional Development	Latvia
35	Leeanne Galea	leeanne.galea@gov.mt	Ministry for Sustainable Development, the Environment and Climate Change	Malta
36	Rene Kemp	r.kemp@maastrichtuniversity.nl	ICIS, Maastricht University & UNU-MERIT	Netherlands

#	Name	Email address	Organization	Country
37	Inger Johanne	Inger-Johanne.Wiese@kld.dep.no	Ministry of Climate and the Environment	Norway
38	Maja Krunic-Lazic	maja.krunic@sepa.gov.rs	Serbian Environmental Protection Agency	Serbia
39	Tatiana Guštafíková	tatiana.gustafikova@sazp.sk	Slovak Environment Agency	Slovakia
40	Slávka Jurkovičová	slavka.jurkovicova@sazp.sk	Slovak Environment Agency	Slovakia
41	Alenka Burja	aburja@yahoo.com	NR	Slovenia
42	Urška Kušar	urska.kusar@gov.si	Slovenian Environment Agency	Slovenia
43	Philipp Röser	philipp.roeser@bafu.admin.ch	Federal Office for the Environment	Switzerland
44	Paul Ekins	p.ekins@ucl.ac.uk	University College London; International Resource Panel	United Kingdom
45	Ahmed Azam	ahmed.azam@defra.gsi.gov.uk	UK National Focal Point: Department for Environment Food and Rural Affairs	United Kingdom
46	David Barnes	david.barnes2@scotland.gsi.gov.uk	Zero Waste Policy, Scottish Government	United Kingdom
47	Adele Storr	adele.storr@defra.gsi.gov.uk	Defra	United Kingdom

7 Instructions how to sign up for the webinar, and log in on the 11 of June

To **REGISTER** for the webinar, please sign up at:

https://docs.google.com/document/d/1kW5iK9nw5Z6_aokae58BpxG0XCG3YcU-9sEnWdox7YE/edit

Instructions how to **LOG IN ON THE DAY OF THE WEBINAR:**

***** please log in between 13.00 and 13.20 *****

Log-in instructions to join the Eionet webinar on policy mixes for resource efficiency

Thursday 11 June 2015, 13:30-15:00 (CET)

Dear Colleagues,

Thank you for signing up for the EEA Resource Efficiency Webinar on Policy Mixes for Resource Efficiency, which will take place on Thursday, 11 June 2015, from 13:30 to 15:00 CET.

Many of you are already familiar with EEA resource efficiency webinars, but for the newcomers, just a short note that the technical aspect of webinars is quite straightforward. You will need a computer with a fast and stable internet connection, and an external microphone and speakers (or a head set).

If you will be using a laptop, you would probably want to use an external microphone (or a headset), as the quality of sound from built in microphones is often quite poor. This can be a problem if you would like to ask a question during the webinar.

To log in, we invite you to:

(1) First do a self-check, to make sure that your equipment is configured properly for Webex

(2) Log in on Thursday 11 June 2015 between 13:00 and 13:20 so that we can start at 13:30 sharp

Below you will find detailed instructions for these two steps.

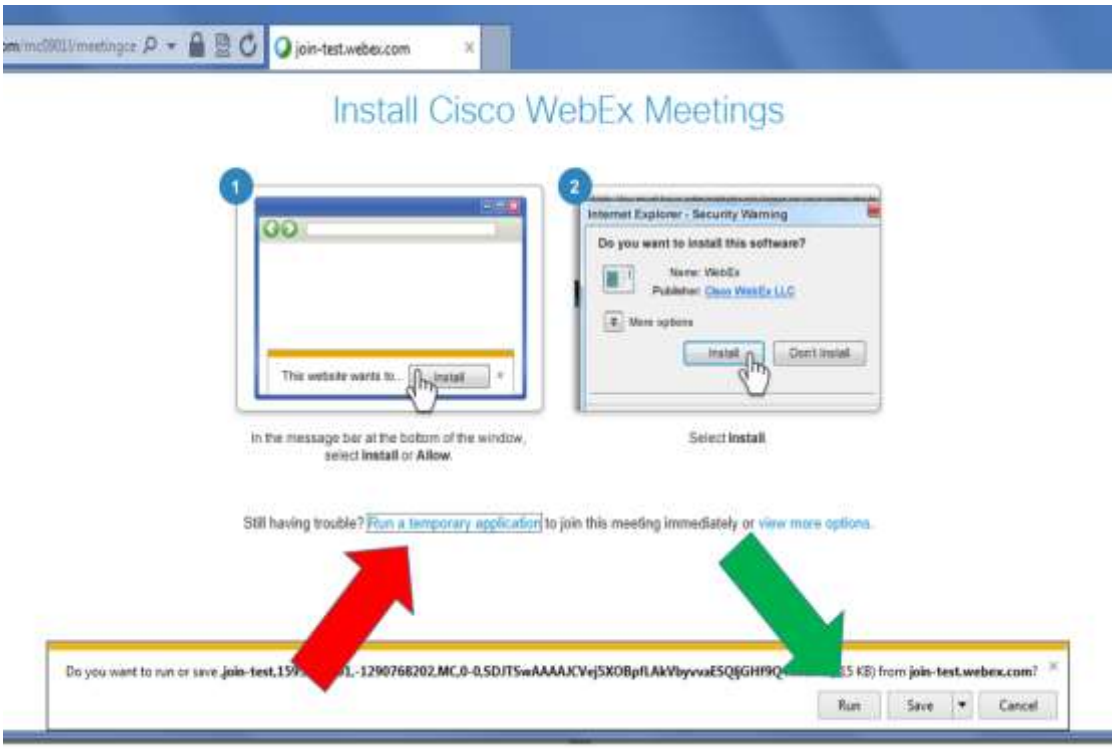
In case of problems, you can reach us by email at: Marco.Veneziani@eea.europa.eu

(1) Technical test of your equipment (self-check)

Prior to the webinar, we kindly ask you to test your equipment (microphone and speakers, headset, etc.) to make sure that everything is configured properly and works well.

To do an interactive test with WebEx (self-check which you can do at any time), please click on: http://www.webex.com/test-meeting.html

IMPORTANT: When a welcome screen comes up, we recommend that you don't install anything but instead click on **'run a temporary application'** (illustrated with a red arrow on the figure below) and then when another small window pops up, you click on RUN (marked with a green arrow).



The screenshot above shows a dialogue window for Internet Explorer. If you are using a different browser or operating system, your window may look different, but there will **always be an option to 'run a temporary application.'** Click on that, and the run the file that pops up or downloads.

The reason why we recommend opting for the 'temporary application' is that with this method nothing will try to install itself permanently on your computer, a step which would typically require an ADMIN password on an office computer.

After the computer checks the configuration, you should get a message 'Congratulations, your system is now set up properly'

(2) On Thursday, 11 June 2015 please log in for the webinar between 13:00 and 13:20 CET

To log in, please click on the link:

https://eea-event.webex.com/eea-event/onstage/g.php?MTID=e23a2f8e7407e4bb6d04024bafb7e7135

and fill in the requested info, using exactly the same email address which you registered with at sign up.

If you are asked for it, the password is EIONET (all capital letters)

Again, the most important thing is to 'run a temporary application' as described in section (1) above, rather than to try installing Webex software permanently.

When you are logged in, please click the two icons at the top right to activate the panels CHAT and PARTICIPANT. And take a look around the Webex display window. NB, everyone's microphones will be muted on entry, to prevent unintended noise.

We will start at 13:30 sharp

See you on Thursday!

Pawel and the webinar team