



DYNAMIX

Decoupling growth from resource use
and its environmental impacts



POLFREE
POLICY OPTIONS FOR A
RESOURCE EFFICIENT ECONOMY

Policy mixes for resource efficiency beyond a circular economy – background and scope of projects

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Joint Final DYNAMIX & POLFREE Conference
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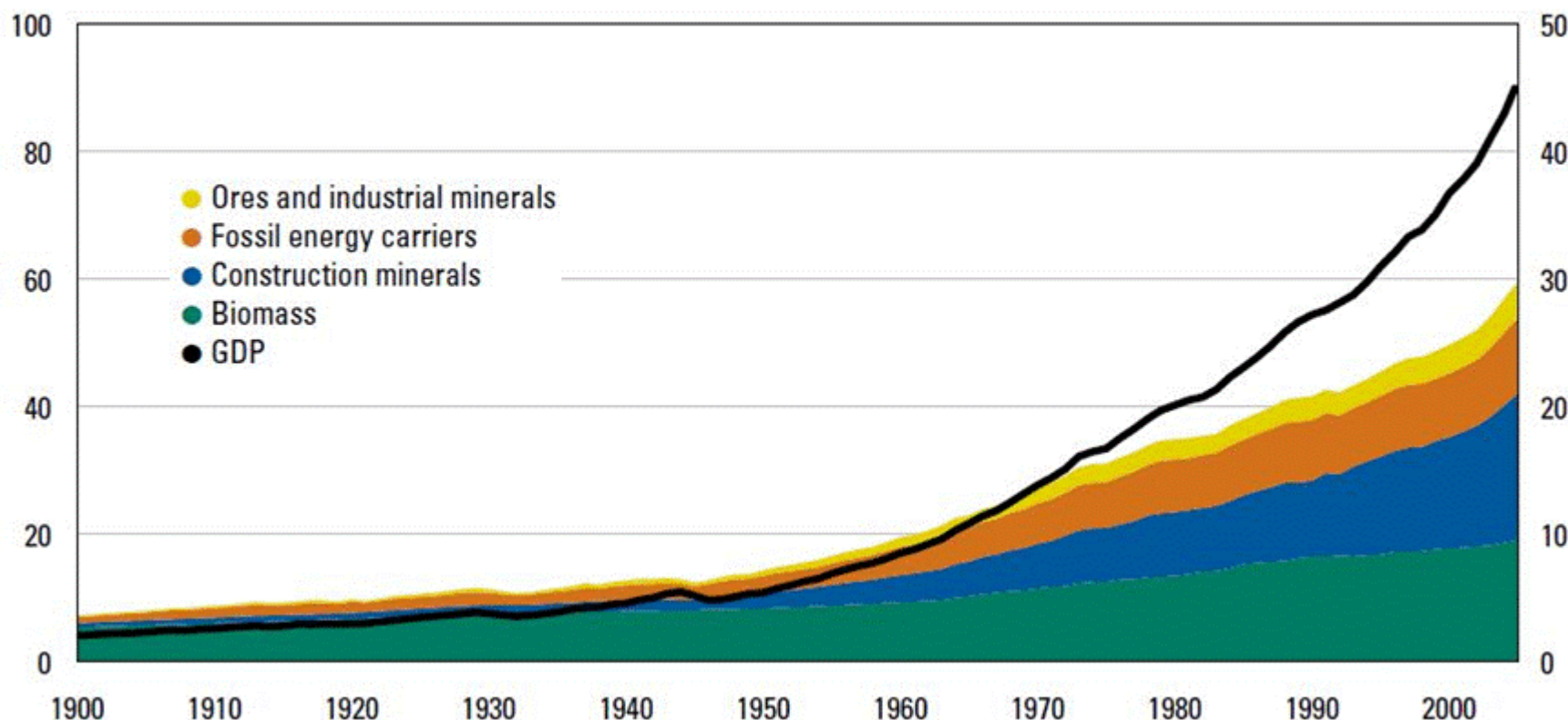
RESOURCE POLICY – GLOBAL RESOURCE USE

Material extraction

Billion tons

GDP

trillion (10^{12}) international dollars



Global Material Extraction in billion tonnes, 1900 – 2005; Krausmann et al. 2009

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RESOURCE PO

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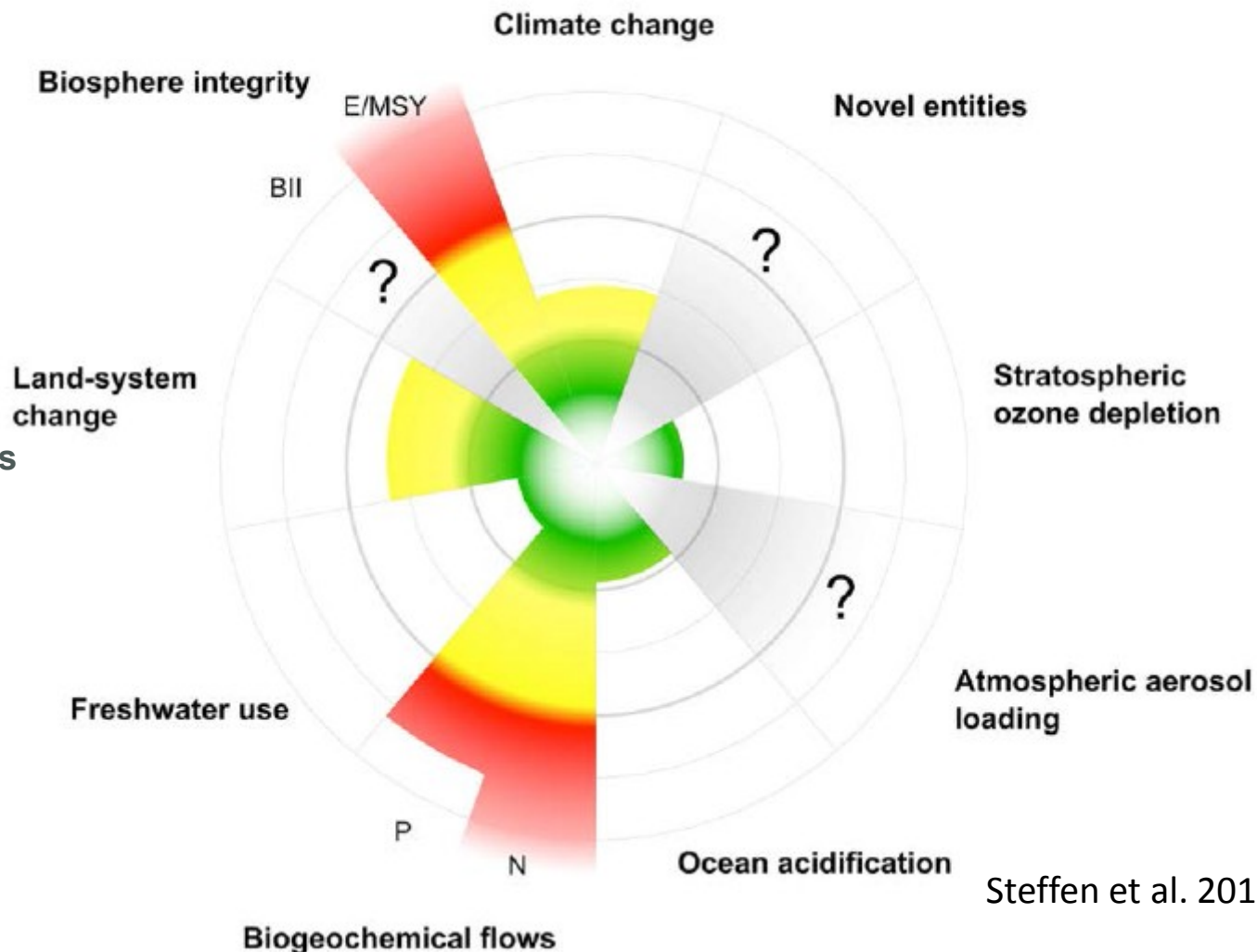
- Beyond zone of uncertainty
- In zone of uncertainty (increasing risk)
- Below boundary (safe)
- Boundary not yet quantified

BII = Biodiversity Intactness
Index

E/MSY = extinctions per
million species-years

P = Phosphorus

N = Nitrogen

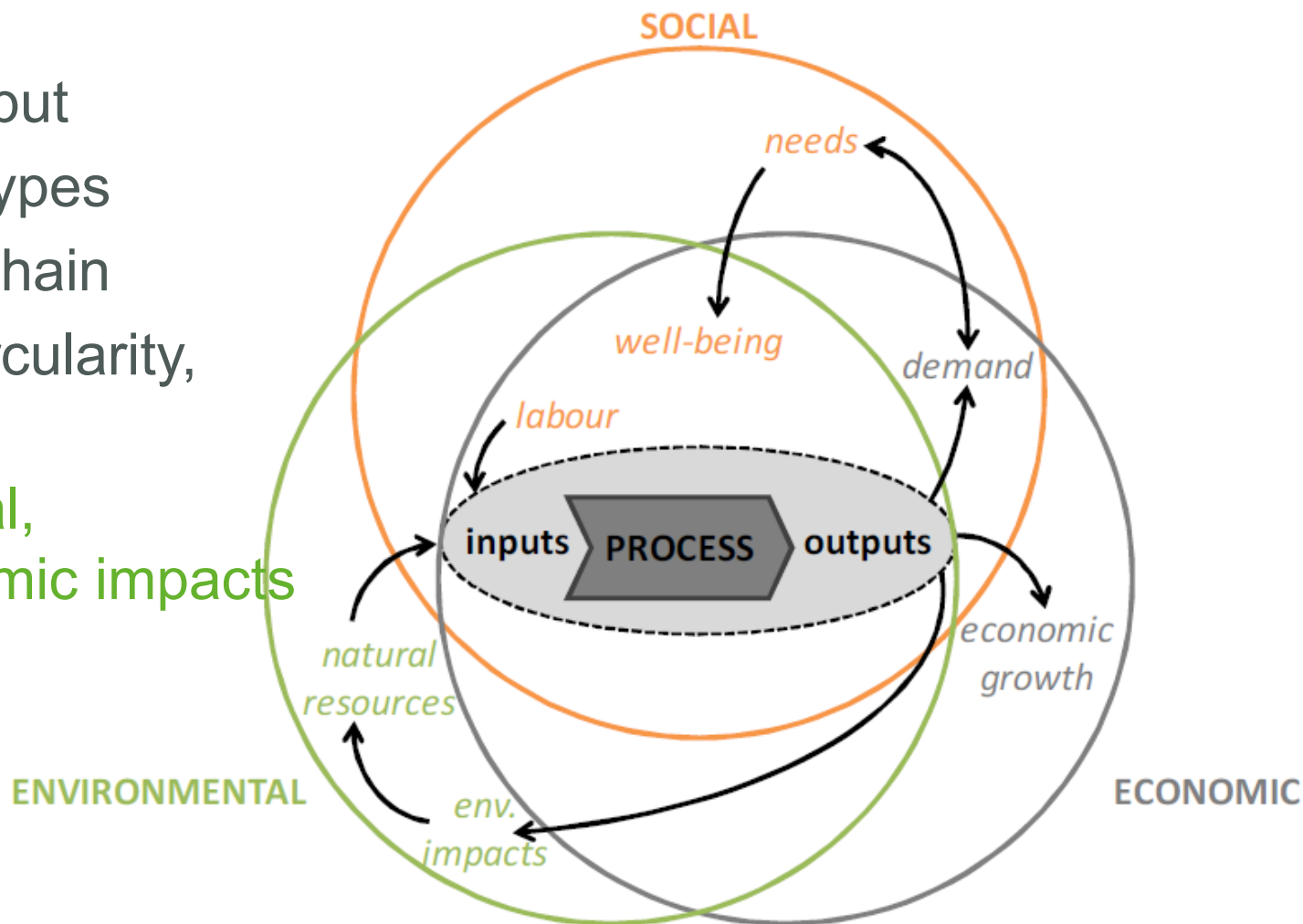


Steffen et al. 2015



PROJECT SCOPE – SOCIO-METABOLIC & CIRCULAR

- Input and output
- All resource types
- Entire value chain
- Enhancing circularity, closing loops
- Environmental, social, economic impacts





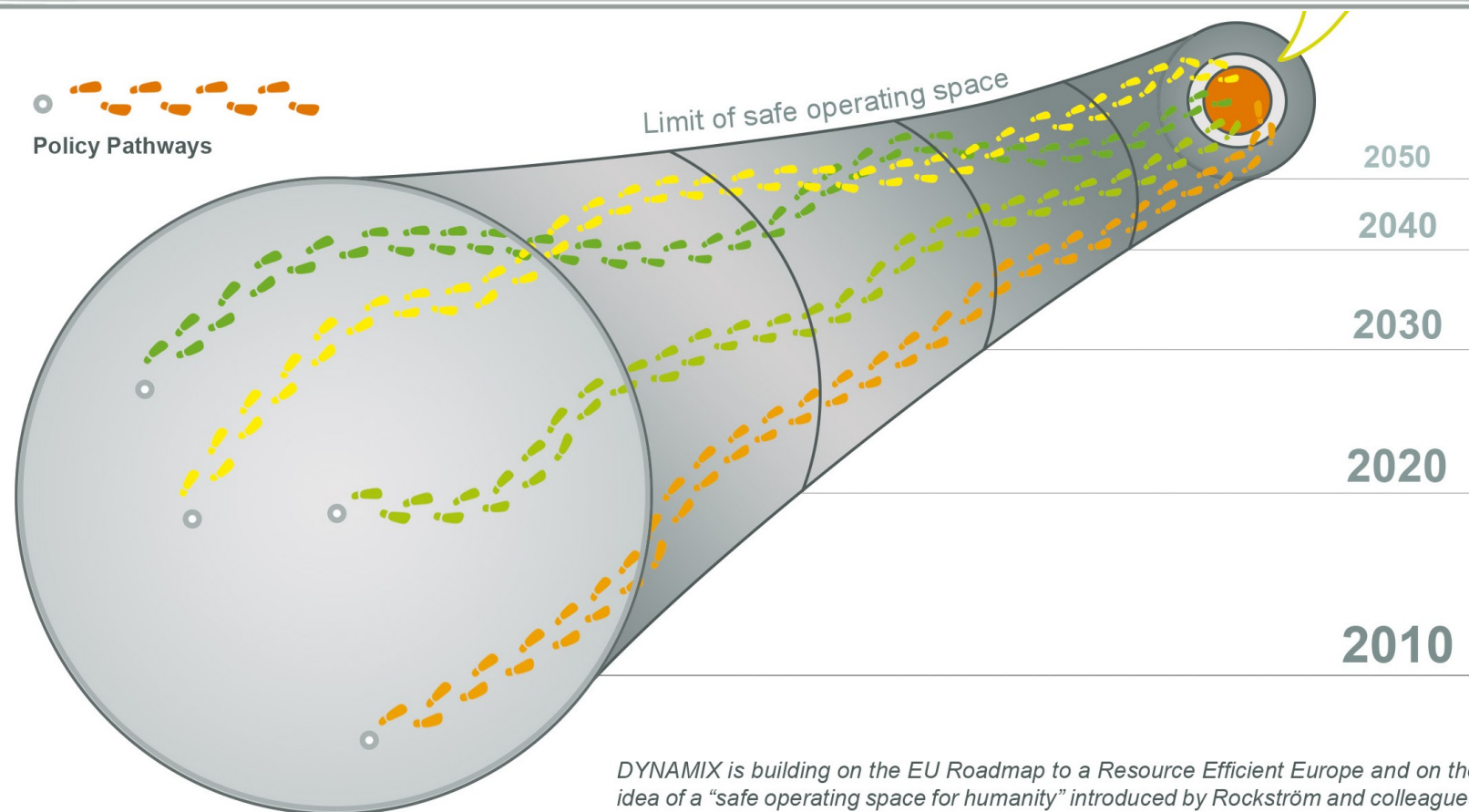
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APPROACH – POLICY MIXES AND ROADMAPPING



DYNAMIX is building on the EU Roadmap to a Resource Efficient Europe and on the idea of a “safe operating space for humanity” introduced by Rockström and colleagues in 2009. Visualisation is adapted from Leppänen et al. 2012 (SPREAD project).

Ecologic Institute 2013

dynamix-project.eu

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PROJECT RECOMMENDATIONS CEP

DYNAMIX-POLFREE Policy Platform (PP4) recommendations and potential links to new CEP (ref. EU action plan for the Circular Economy, COM(2015) 614 final)

Selected PP4 recommendations

- Identify targets and indicators for RE
- Promote waste prevention
- Support shift from “waste” to “resource”
- Enhance responsible consumption through transparent labeling, product information
- Ensure consistency between funding and environmental policy priorities
- Shift taxes from labour to material use and phase out EHS
- Support business resource efficiency through exchange of know-how and best practices

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CEP

- ☹ no RE target
- ☹ Product design, food waste (no target)
- ☺ Boosting secondary raw materials market
- ☺ New energy labelling for household appliances
- ☹ Horizon 2020, Cohesion Policy funds (BREFs, recycling facilities)
- ☹ MS encouraged to use economic instruments (e.g. taxation)
- ☹ best available technique reference documents' (BREFs)





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POLFREE: AN INTRODUCTION

- European Union Collaborative FP7 Project
- October 2012 until end of March 2016
- 5 work packages:
 - WP1: why have resources been used inefficiently?
 - WP2: new concepts and paradigms for resource efficiency
 - WP3: scenarios and modeling of policy implementation
 - WP4: synthesis, conclusions and engagement
 - WP5: project management

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POLFREE: Institutions

- UCL ISR (UK)
- Wuppertal Institute (Germany)
- TNO (Netherlands)
- ICIS, Maastricht University (Netherlands)
- GWS (Germany)
- SERI (Austria)
- PIK (Germany)
- International Synergies (UK)

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POLFREE: The need for policy

- Societal goals for a RE economy
 - World vision and values influencing policy goals
 - Aligning policy goals of competitiveness, resource security and environmental quality
 - Environmental and resource boundaries and constraints
- These goals cannot be adequately pursued only through markets
- Policy needs to guide markets towards a more resource-efficient economy





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POLFREE: Aims

- Understand the web of constraints and barriers to resource efficiency
- Identify the concepts, policies and business models that could overcome the barriers, untangle the web of constraints
- Create a vision for and pathways to a resource-efficient Europe
- Identify policy mixes that can promote a resource-efficient economy
- Model scenarios simulating the proposed pathways and policy mixes
- Synthesise and draw policy conclusions from the results

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WP1: Why resources have been used inefficiently

- Analytical framework
- Lessons from EU policy experiences
- Comparing trends and policies of key countries
- Resource-efficient cost curves for material consumption
- Business barriers to resource efficiency
- Behavioural barriers to resource efficiency





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WP2: New concepts and paradigms for RE policies

- Synthesis of new concepts
- A vision for a resource-efficient Europe
- A new policy mix for resource-efficient economy in Europe
- New business models
- Global governance for resource-efficient economies

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A plethora of new concepts

- Industrial ecology, industrial symbiosis
- Waste prevention, priority waste streams, extended producer responsibility
- Eco-innovation
- Transition management, transition towns
- Green growth, green economy, inclusive sustainable growth, Beyond GDP', degrowth
- Ecosystem goods and services, natural capital approach, resilience & safe operating space, ecological economics, weak, strong and sensible sustainability
- Multi-level (micro/meso/macro) governance
- Cleaner production, eco-efficiency, resource-efficiency, 'pollution prevention pays'
- Sustainable Consumption and Production, leapfrogging, slow food,
- Product-service systems, supply chain management, lease society, Natural Step,
- Circular economy, 3R (repair, re-use, recycle), cradle-to-cradle
- Hannover Principles (sustainable design), appropriate technology

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WP3: Scenarios and modelling of policy implementation

- Linking economic (EXIOMOD, CGE model; GINFORS, macro-econometric E3 model) and ecological (PIK land use) models
- Scenario formulation
- Running scenarios and generating results
- LCA of selected products and sectors
- Integrated scenario interpretation





OBJECTIVES/INTENDED OUTCOME OF FINAL CONFERENCE

- Share insights from two major research projects and their findings on scenarios and policy mixes for a resource-efficient European Union
- Take part in a high-level debate to link science-based evidence to the Circular Economy Package.
- Discuss how policy mixes for radical increases in resource efficiency may become or be made politically feasible.
- Network with a large pool of experts and practitioners from all over Europe





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THANK YOU VERY MUCH!

Please make use of the conference twitter hashtag
#REBXL

For more info...

- Visit: <http://www.polfree.eu> or www.dynamix-project.eu
- Sign up to our newsletter
- Twitter: POLFREEEC or @EUResources

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