

WP 4: Economic Incentives & Funding Framework

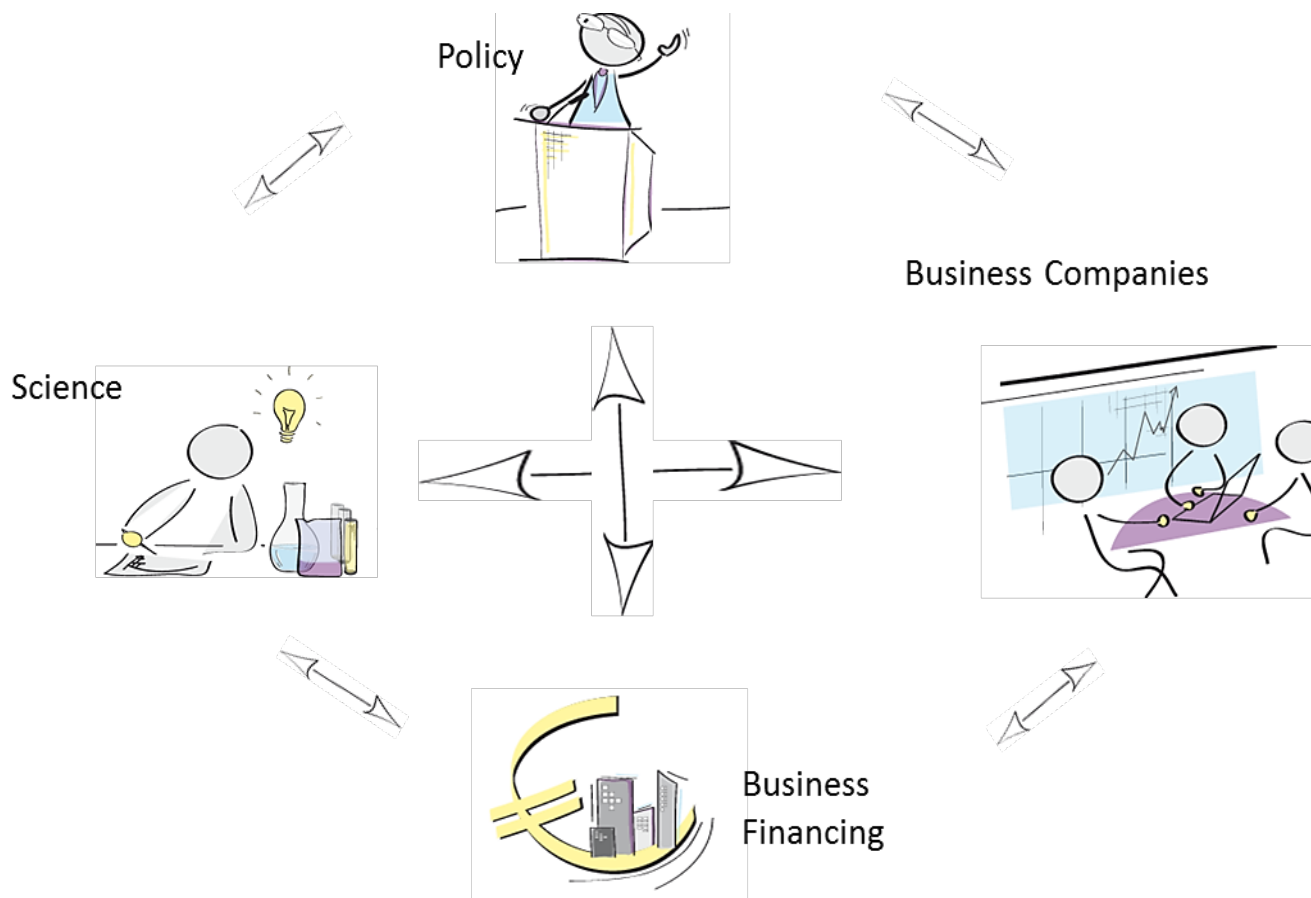
Dr. Robin Bürger
Jens Rockel
Dominik Palsa

Berlin, 04 June 2014



- I. **Follow-up Transnational Workshop on Financing**
- II. WP4 milestones
- III. Corporate Financing Instruments (4.1.10)
- IV. Financial guide (4.1.11)
- V. Advanced cost benefit approach (4.2.4)
- VI. Synthesis report (4.3.2) and policy recommendations (4.3.3)
- VII. Outlook WP4 and Vienna 2014











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4.2.1	Selection of cost benefit analysis approaches and tools	X	X	X	X	X	X	X	X	X																															
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4.3.3	Policy recommendations			X																																					

Country	Target number of interviews	Conducted interviews
Austria	15	15
Czech Republic	15	10
Poland	7-10	4
Hungary	15	17
Italy	5-10	13
Germany	25	41

 Expert interviews are the basis for all activities in WP4
 Application form: 50 interviews  100 interviews have been conducted!

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Review of Corporate Financing Instruments on the
Enterprise Level (WP 4.1.10)

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➔ almost completed

➔ Feedback
included from:

Austria



Hungary



Italy



Czech Republic



Germany



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PRESOURCE - WP 4 (4.1.11.)

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Financial Guide



1

PRESOURCE

Introduction

The Financial Guide within the EU-project PRESOURCE (Promotion of Resource Efficiency in SMEs in Central Europe; www.presource.eu) is a jointly developed transnational tool to promote innovative financing schemes and encouraging more long-term thinking in politics, business and finance.

Based on more than 80 expert interviews with public, private and innovative financial stakeholders that are active in the field of eco-innovation/resource efficiency, the guide aims to give a comprehensive overview of relevant financing actors among the six partner countries of PRESOURCE, namely Austria, Czech Republic, Germany, Hungary, Italy and Poland.

The primary objective is hereby in particular to summarize suitable financing instruments fostering eco-innovation overall. Even though the topic of resource efficiency has reached a high importance in politics and business, financial instruments for resource efficiency projects are still rare, under development or not yet developed in the different countries. Resource efficiency is herewith understood as "reducing the use and the costs of energy, material and water in the production process and product life cycle". However, for the Financial Guide the PRESOURCE-focus of resource efficiency was therefore broadened to the eco-innovation sector as a whole.

Besides the fact, that small- and medium-sized enterprises (SMEs) are often not aware of their resource utilisation and the associated costs, real costs of non-product outputs and the related (cost) reduction potential as well as possible means to improve it, SMEs face serious challenges in financing necessary investments due to the lack of information about the increasing variety of suitable financing instruments and relevant investment criteria. Hence, one of the major impulses for the guide was to foster the overcoming of existing barriers as well as to introduce a set of economic incentives that stimulate SMEs to systematically measure and improve their resource efficiency/eco-innovation¹.

Therefore, the Financial Guide shall result in improved knowledge and mechanisms for risk sharing and for financing eco-innovations in SMEs within the existing framework conditions. This again

¹ European Commission's definition of eco-innovation: Any form of innovation aiming at significant and demonstrable progress towards the goal of sustainable development. This can be achieved either by reducing the environmental impact or achieving a more efficient and responsible use of resources (http://ec.europa.eu/innovation/en/eco-innovation/faq/index_en.htm, 29.04.2014).



2

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shall increase investments in eco-innovations by introducing new innovative financing schemes such as revolving funds, crowdfunding or contracting schemes that enable SMEs to invest into eco-innovations focusing on resource efficiency.

The graphic below should be understood as an auxiliary tool to give a brief overview of the typical financing stages in a SME life cycle (introduction stage, growth stage, maturity stage) and the corresponding most common financing instruments during these stages.

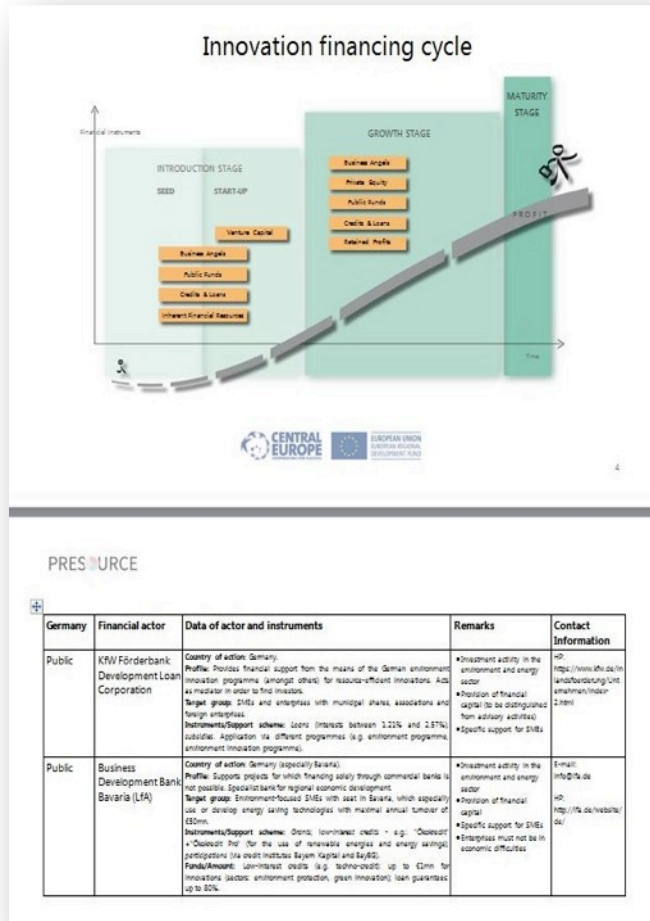
Within the Financial Guide, the instruments are classified with respect to the three categories public, private and innovative. A short description of the profile of the financial stakeholders is provided, including the definition of the target group and what kind of instruments and/or support schemes is offered by the stakeholders. Furthermore, the instruments are marked, if fulfilling specific, within the project's framework important criteria:

- Investment activity in the environment and energy sector
- Provision of financial capital
- Transnational activity
- Advisory support / consulting
- Specific support for SMEs




Nevertheless, this overview of the different kinds of instruments in the six partner countries is without any claim to completeness and cannot be seen as a final result, but rather as a first step of orientation for capital-seeking SMEs, financing institutions, policy makers and public bodies responsible for the development of public funding sources. And also rather as a first step of research that should continuously be pursued.



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- ➔ almost completed
- ➔ final feedback from one partner is missing
- ➔ last minor graphical issues by Fraunhofer have to be done

CR	Financial actors	Data of actor and instruments	Contact	Remarks / Categories
Public	<p>Czech Invest - Investment and Business Development Agency</p>  <p>CZECHINVEST</p>	<p>Country of action: Czech Republic</p> <p>Profile: Established by the Ministry of Industry and Trade. Purpose: provides services and development programmes which contribute to attract foreign investment and to develop Czech companies.</p> <p>Target group: All kind of businesses. Preferred sectors: Green mobility; R&D; Cleantech or eco-energy.</p> <p>Instruments/Support scheme: Grants; Supports investment activities through information service and consultancy (handling of investment incentives; business property identification and aftercare services by linkage with structural funds of the EU).</p> <p>Funds/Amount: Grants ranging from €20 000 to €4mn depending on project type.</p>	<p>Tel +420 296 342 579</p> <p>E-mail: fdi@czechinvest.org</p> <p>HP: http://www.czechinvest.org</p>	<p>Advisory services for all kind of businesses.</p> <p>85% of financial sources from Structural Funds.</p> <p>13 regional offices throughout the CR.</p> <p>1, 2, 4</p>
Public	<p>Czech Private Equity and Venture Capital Association</p>  <p>Czech Private Equity & Venture Capital Association</p>	<p>Country of action: Czech Republic</p> <p>Profile: Manages around 20 Czech investments in their portfolios. Includes a wide range of industry participants (venture capital and buy-out firms, pension funds, insurance companies, fund-of-funds, family and associates from related professions).</p> <p>Target group: Companies that have potential for creating value and increasing their market share with a business plan aiming to produce a highly innovative product.</p> <p>Instruments/Support scheme: Equity stake in the company (medium-to long-term capital); purchases of the company (management buy-ins and buy-outs); venture capital (start-up and later growth stage).</p> <p>Funds/Amount: Investments have to reach size of min.: €1mn.</p>	<p>President of the Association: Jiří Beneš</p> <p>E-mail: info@cvca.cz</p> <p>Tel +420 776 342 396</p> <p>Assistant: Hana Marčíková</p> <p>E-mail: marcikova@cvca.cz</p> <p>Tel +420 724 342 395</p> <p>HP: http://www.cvca.cz/en/</p>	<p>No own financial means, but board for investors.</p> <p>2, 4</p>
Public	<p>Technology Agency of the Czech Republic</p>  <p>Technology Agency of the Czech Republic ... from ideas to applications</p>	<p>Country of action: Czech Republic</p> <p>Profile: Purpose: support applied research and experimental development.</p> <p>Target group: Legal business entities and individuals; research organizations in the areas: advanced technologies; materials and systems; energy resources and environmental creation and protection; sustainable development of transport.</p> <p>Instruments/Support scheme: Project-bound loans allocated via two relevant programmes "ALFA" and "BETA"; provision of advisory support.</p> <p>Funds/Amount: 2011-2016: Ca. €300mn distributed through the two programmes.</p>	<p>Tel +420 234 611 111</p> <p>E-mail: info@tacr.cz</p> <p>HP: http://www.tacr.cz/english/</p>	<p>65% public means</p> <p>1, 2, 4</p>
Public	<p>Operational Programme Environment</p>	<p>Country of action: Czech Republic</p> <p>Profile: Second largest Operational Programme in the CR. Main goal: protection and improvement of environmental quality in the CR.</p> <p>Target group: Municipalities and towns; public administration and self-government bodies; research and scientific institutes; private businesses; legal; private citizens and non-profit organisations.</p>	<p>HP: http://en.opzp.cz/sekce/506/about-operational-programme-environment/</p>	<p>Works with financial means from EU Cohesion Funds and within the framework of the State Environmental Fund.</p>

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PRESOURCE

PRESOURCE - WP 4 (4.2)

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Cost Benefit Analysis of investments in eco-innovation/resource efficiency measures

- A guide for SMEs seeking for external funding



Problem

- Measures for eco-innovation/RE face a high level uncertainty about their economic feasibility
- Lack of valuation criteria for RE investments
= imperfect market conditions



Necessity for a comprehensive tool to optimize the decision-making processes of RE-investments



Solution

Development of an easy to use indicator system and tool for SMEs seeking for external funding

- Soft indicators
- Environmental indicators
- Economic indicators

Soft Indicators

= Upfront checklist scheme

- Provides a qualitative overview of the general environmental impact:

- Managerial decisions,
- Eco-certifications
- EMSs
- etc.

- ☐ Sustainability as a management objective
(e.g. an assigned project manager for eco-innovations)
- ☐ Receipt of an eco-certification
- ☐ Other _____

2. Cost reduction of resources

- ☐ Introduction of a circular economy system
- ☐ Improvement of energy, material and/or water conservation
- ☐ Usage of secondary resources
- ☐ Other _____

3. Reduction of environmental impact

- ☐ Reduction of greenhouse gases emissions
- ☐ Improvement of waste management
- ☐ Introduction of recycling and/or reuse measures

Environmental Indicators

- Overview of a SMEs environmental status and performance
- Comparison with estimated project targets and SME benchmarks

Input
Non-renewable materials intensity
Restricted substances intensity
Recycled / reused content
Operations
Water intensity
Energy intensity
Renewable proportion of energy
Greenhouse gas intensity
Products (indicators are linked to each product)

1) Input

e.g. non-renewable materials intensity (t / year)

$$\frac{\text{Weight of non-renewable resources consumed}}{\text{Normalisation factor}}$$

Indicator

.....(t / year)

Project target

..... (t / year)

2) Operations

e.g. water intensity (m³ / year)

$$\frac{\text{Total water intake}}{\text{Normalisation factor}}$$

Indicator

.....(m³/year)

Project target

..... (m³/year)

3) Products (indicators linked to each product)

e.g. recycled / reused content

$$\frac{\text{Sum for each product } \{(\text{Weight of a product unit} \times \text{Proportion of recycled content} \times \text{Units produced}) + (\text{Weight of a product unit} \times \text{Proportion of reused content} \times \text{Units produced}) \}}{\text{Sum for each product (Weight of a product unit} \times \text{Units produced)}} \times 100$$

Indicator

.....(%)

Project target

..... (%)

Economic Indicators

Evaluation alongside the three layers of the PRESOURCE-Definition of RE:



Energy, Water and Material

Development of an Investment Analysis Tool for RE-investments utilisable by SMEs

Financial evaluation of RE investment projects:

Net Present Value (NPV)
Pay Back Period (PBP)
Internal Rate of Return (IRR)
Return on Investment (ROI)

Scenario Analysis of Eco-Innovation Investments

	Status Quo	Scenario 1 Energy, water and process optimisation	Scenario 2 Improved energy, water and process optimisation
Energy¹⁷			
Energy consumption	500,000 kWh / year	400,000 kWh / year	380,000 kWh / year
Total value of energy costs	93,950 € / year	75,160 € / year	71,402 € / year
Optimisation potential		25.00 %	31.58 %
Costs of related maintenance		2,000 € / year	2,000 € / year
Total cost saving potential		16,790 € / year	20,548 € / year
Water¹⁸			
Water consumption	50,000 m³ / year	40,000 m³ / year	40,000 m³ / year
Total value of water costs	83,500 € / year	66,800 € / year	66,800 € / year
Optimisation potential		25.00 %	25.00 %
Costs of related maintenance		3,000 € / year	3,000 € / year
Total cost saving potential		13,700 € / year	13,700 € / year
Material			
Total material input	500,000 € / year	470,000 € / year	450,000 € / year
Optimisation potential		6.38 %	11.11 %
Costs of related maintenance		3,500 € / year	4,500 € / year
Total cost saving potential		26,500 € / year	45,500 € / year
Additional net profits			
Through production optimisation		15,500 € / year	21,500 € / year
Through process optimisation		8,000 € / year	13,000 € / year
Through recycling/reuse measures		0 € / year	0 € / year
Other cost savings (e.g. cost of emissions, pollution, waste)		0 € / year	0 € / year
Investment Summary			
Investment costs	200,000 €	350,000 €	
Useful economic life	5 years	7 years	
Net present value (NPV) over economic life cycle ¹⁹	148,480 €	311,082 €	
Pay Back Period (PBP)	2.48 years	3.06 years	
Internal Rate of Return (IRR)	23 %	20 %	
Return On Investment (ROI)	74.2 %	88.9 %	

Outlook

- Upcoming: selected expert interviews with external capital providers to validate and to further enhance the output of WP4.2.4
- Dynamic values to increase analysis depth -> e.g. increase of costs

ENERGY				
Lifetime (in years)	15	1	1	1
Amount of energy consumption p.a. (in kWh)	500,000	400,000	400,000	400,000
Electricity price (in Ctl/kWh) / Increase of costs p.a.	2.30%	10.70	10.95	10.95
Total value of energy costs (in I)	53,500	42,800	43,784	44,100
Optimisation amount		25.00%	22.13%	13.44%
Costs of related maintenance (in I)		2,000	2,000	2,000
Net total cost savings (in I)		8,700	7,716	6,709
WATER				
Lifetime (in years)	8	1	1	1
Amount of water consumption p.a. (in m³)	50,000	44,000	44,000	44,000
Water price (in I/m³) / Increase of costs p.a.	1.50%	1.67	1.70	1.72
Total value of water costs (in I)	83,500	73,480	74,582	75,701
Optimisation amount		13.64%	11.96%	10.30%
Costs of related maintenance (in I)		4,000	4,000	4,000
Net total cost savings (in I)		6,020	4,918	3,799
MATERIAL				
Lifetime (in years)	10	1	1	1
Value of total material input p.a. (in I)	500,000	450,000	454,500	459,045
Increase of material costs p.a.	1.00%			
Optimisation amount		11.11%	10.01%	8.92%
Costs of related maintenance (in I)		5,000	5,000	5,000
Net total cost savings (in I)		45,000	40,500	35,955
INVESTMENT SUMMARY				
Cashflows (CFs)		59,720	53,133	46,463
Discounted CFs (DCF)		59,720	49,454	40,251
Cumulated DCFs / Investment costs		(140,280)	(90,826)	(50,575)
Sum of CFs		298,232		
Sum of DCFs		249,046		
Investment costs		200,000		
Assumed Discount rate vs. calculated WACC		7.44%		
Net Present Value (NPV)		39,330		
Return On Investment (ROI)		119.67%		
Pay Back Period (PBP)		3.35		
Dynamic PBP		7.32		

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Total cost saving potential		16,790 € / year	20,548 € / year
Water ²⁸			
Amount of water consumption	50,000 m³ / year	40,000 m³ / year	40,000 m³ / year
Total value of water costs	83,500 € / year	66,800 € / year	66,800 € / year
Optimisation potential		25.00 %	25.00 %
Costs of related maintenance	3,000 € / year	3,000 € / year	3,000 € / year
Total cost saving potential		13,700 € / year	13,700 € / year
Material ²⁹			
Amount of material input	500,000 € / year	470,000 € / year	450,000 € / year
Optimisation potential		6.38 %	11.11 %
Costs of related maintenance	3,500 € / year	3,500 € / year	4,500 € / year
Total cost saving potential		26,500 € / year	45,500 € / year
Other cost savings			
Through recycling/reuse measures		0 € / year	0 € / year
Other cost savings (e.g. cost of emissions, pollution, waste management etc.)		0 € / year	0 € / year
Investment Summary			
Investment costs	200,000 €		350,000 €
Useful economic life	5 years		7 years
Net present value (NPV) over economic life cycle ³⁰	148,480 €		311,082 €
Pay Back Period (PBP)	2.48 years		3.06 years
Internal Rate of Return (IRR)	23 %		20 %
Return On Investment (ROI)	74.2 %		88.9 %

Discussion

- Q1:** *How to best link the cost benefit method with the EDIT-value tool (WP3 with WP4)?*
- Q2:** *Are there any experiences how to quantify the economic benefits of the proposed soft indicators, e.g. implementation of an EMS, the acquisition of an Eco Label or of CSR certification?*
- Q3:** *Do you see any limitations and/or problems arising with the CBA-Tool?*



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- VI. Synthesis report (4.3.2) and policy recommendations (4.3.3)**
- VII. Outlook WP4 and Vienna 2014

PRESOURCE Detailed work plan and timetable of activities per project partner		UBA	BMU	Fraunhofer	ENVIROS	ProAkademia	Stemium	ENEA	Corvinus	EP CO	Phase 1 2012					Phase 2 2012 - 2013					Phase 3 2013					Phase 4 2013-2014					Phase 5 2014									
NO.	TITLE	PP-1	PP-2	PP-3	PP-4	PP-5	PP-6	PP-7	PP-8		6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11
WP4: Economic incentives & recommendations for funding framework /																																								
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4.1.3	Market and stakeholder analysis in DE	X																																						
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4.1.5	Market and stakeholder analysis in AT						X																																	
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4.1.8	Market and stakeholder analysis in HU								X																															
4.1.9	2nd transnational partner workshop Financial Instruments	X	X	X	X	X	X	X	X	X																														
4.1.10	Review of corporate financing instruments on the enterprise level	X	X	X	X	X	X	X	X																															
4.1.11	Financial guideline for promoting new financing schemes	X	X	X	X	X	X	X	X																															
4.2.1	Selection of cost benefit analysis approaches and tools	X	X	X	X	X	X	X	X																															
4.2.2	Assessment of collected cost benefit analysis	X	X	X	X	X	X	X	X																															
4.2.3	Transnational partner workshop Cost Benefit Analysis	X	X	X	X	X	X	X	X																															
4.2.4	Advanced cost-benefit analysis			X																																				
4.3.1	Institutional barriers and drivers for financing eco- innovation	X	X	X	X	X	X	X	X																															
4.3.2	Barriers and drivers for financing eco- innovation on enterprise level	X	X	X	X	X	X	X	X																															
4.3.3	Policy recommendations			X																																				

Synthesis report No. 1 (4.3.1, based on the main findings of the analytical reports from Poland, the Czech Republic, Hungary, Italy, Austria and Germany)

Goal:

- to summarize similarities and differences concerning institutional barriers and drivers for financing RE-measures in SME
- to identify and assess financing opportunities for resource efficiency measures in small and medium enterprises (SMEs). The report summarizes by underlining similarities and differences concerning institutional barriers and drivers for financing RE-measures in SMEs

Status:

- final (reviewed by the LP and sent to the coordinator)

Synthesis report No. 2 (4.3.2 *“Barriers and drivers for financing on enterprise level”*)**Basis:**

- desk research (surveys and analyses related to the access to public and private capital from a company perspective)
- analytical reports from Poland, the Czech Republic, Hungary, Italy, Austria and Germany

Active contribution from all partners needed → UPDATE of the analytical reports (more specific assessment of the findings from the WP3-interviews; any new interview results?) → see email from Annamaria by 27 May 2014

Time schedule:

- *6 June*: revision of the analytical reports (responsible partners from each country)
- *16 June*: draft synthesis report No. 2 (MOEZ) → request from the partners by 23 June
- *30 June*: final synthesis report No. 2 (MOEZ)

PRESOURCE Detailed work plan and timetable of activities per project partner		UBA	BMU	Fraunhofer	ENVROS	ProAkademia	Stemium	ENEA	Corvinus	EPCO	Phase 1 2012					Phase 2 2012 - 2013					Phase 3 2013					Phase 4 2013-2014					Phase 5 2014									
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4.3.3	Policy recommendations			X																																				

Policy Advice (4.3.3)

- Policy recommendations for policy makers and stakeholder groups at the EU and national levels
- Political framework conditions for better access to innovative financing instruments for RE-measures

Basis:

- WP4-outputs
- Desk research (surveys, studies etc. at the EU-level)
- Input from the 2nd financing workshop in Vienna; 9 October 2014
- Further specification of the framework conditions in the partner countries needed

Time schedule:

- *15 Sept*: Request for update of the description of framework conditions in the analytical reports (responsible partners from each country)
- *15 Oct*: Draft Policy Advice (MOEZ)
- *30 Oct* : Final Policy Advice (MOEZ)

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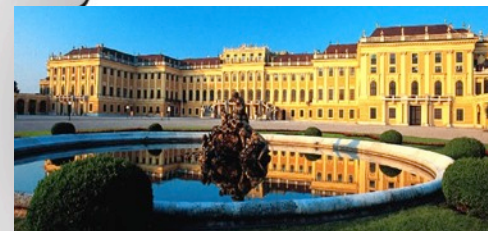
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SEE YOU IN VIENNA!



2nd Transnational Workshop on Innovative Financing Instruments

Vienna, 9 October 2014



Thank you for your attention!

Fraunhofer MOEZ

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