IEA DSM Task 16 'Innovative Energy Services'

Phase IV: Life-Cycle Costing; 'Deep Retrofit'; Simplified M&V; Crowd-Financing for EE & RE projects & Energy Services Taxonomy

Task Status Report
51st IEA DSM ExCo Meeting
Bergen, Norway, April 16-18, 2018

Jan W. Bleyl, Task 16 Operating Agent

Task 16 in a nutshell

1. **Innovations in performance-based Energy Services** (ES):
   => Think Tank, e.g. ***sM&V, Facilitators, IEC, DER, LCCBA, Multiple Project Benefits …***

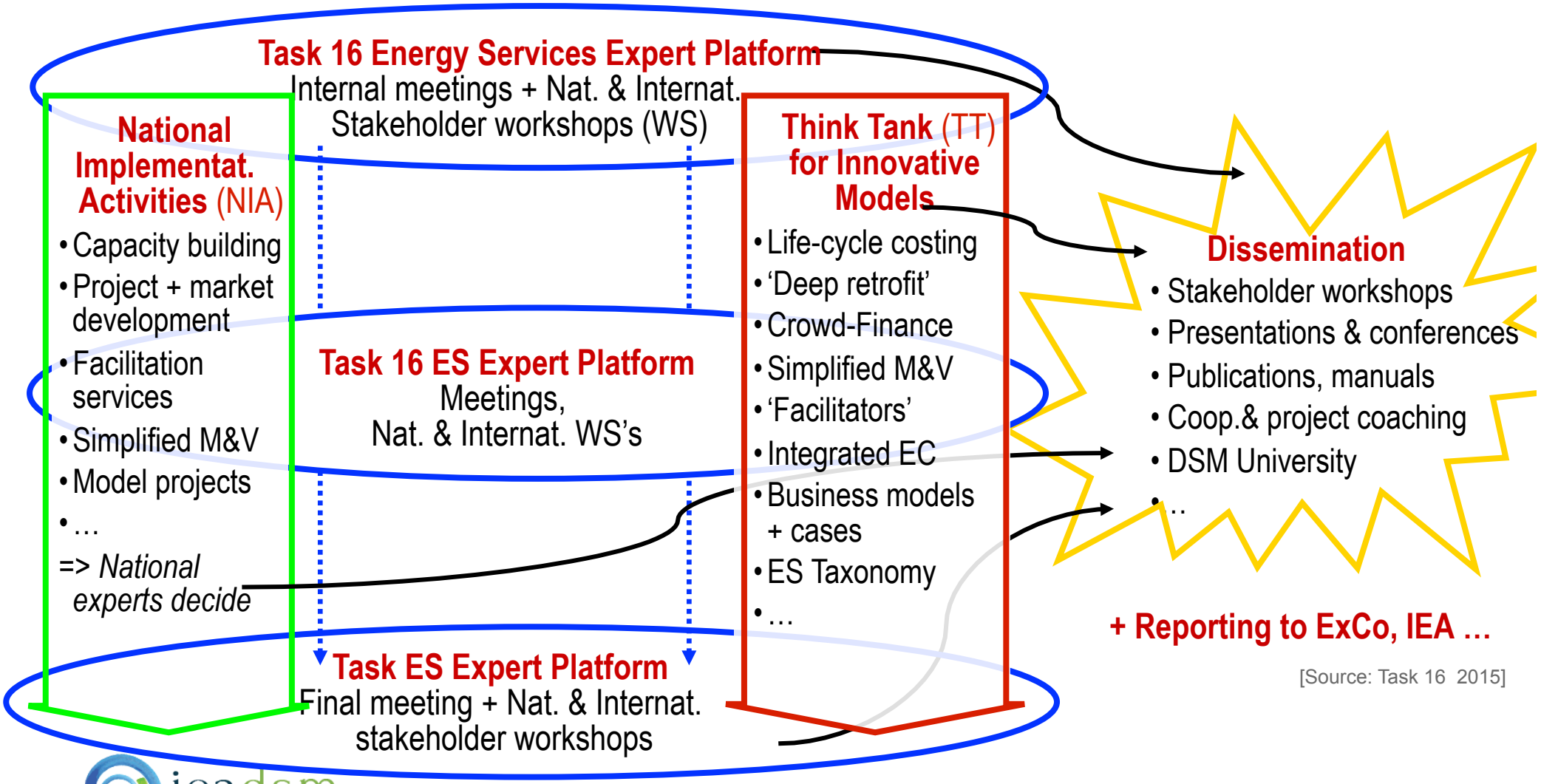
2. **Task 16 Energy Services Expert Platform:**
   => Expert meetings, mutual coaching & collaborations …

3. **National implementation activities** (NIA):
   => Individual ES market development in each country

4. **Dissemination of results:**
   => Publications, stakeholder workshops, DSM-University …

ieadsm energy efficiency

Task 16 structure



[Source: Task 16 2015]

Executive Summary

1. ***Participants:*** **Belgium** *(since 2016)*, **Canada** *(in kind)*, **Germany** *(coop. Annex 61)*, **GIZ** *(for 9 m)*, **Netherlands**, **Norway**, **Switzerland**
2. ***Budget:*** **181.700,- EUR**: **93% spent** => ✔ to finish planned work
3. ***Think Tank****:* **"Office Building Deep Energy Retrofit: Life Cycle Cost Benefit Analyses using Cash Flow Analysis and Multiple Benefits on Project Level"** to be published in **Special Issue of Energy Efficiency;**
   in close cooperation with Task 16 & external experts & IEA ECB Annex 61
4. ***Outreach****:*
   - **Netherlands: RVO + NE set up an Energy Services 'Facilitator' network**
   - **IEA secretariate** invitation to represent Task 16 at **MB workshop**
   - **IPMVP**: interest in **simplified Measurement & Verification approach**
5. *@**ExCo**:* **Guidance on future work needed** *(if continuation of work after June 2018 is desired)***!**

Executive Summary

⇨ **?sM&V** (simplified M&V): 2nd journal submission with Efficiency 1

Accomplishments since last meeting

Stakeholder workshop, Dissemination and cooperation (subtasks 19 + 22)

guarantEE
Building Energy Services in Europe

EPC Facilitators training
6 oktober 2017, RVO, Croeselaan 15, Utrecht, Domtorenzaal

Het programma

9.30 Inleiding en kennismaking

10.00 Jan W. Bleyl (Oostenrijk), Europees Coördinator Energiediensten voor IEA DSM Taak 16 (International Energy Agency – Demand Side Management): On the role of Facilitators as enablers for EE projects; Make or Buy; benefits (NB: in het engels)

10.45 koffiepauze

11.00 Petra Heemskerk, partner en advocaat bij CMS Praktijkgroep Real Estate & Construction, gespecialiseerd in aanbestedingsrecht en PPS: Juridische aspecten van aanbesteding en selectie

11.45 André Salomonson, Managing Partner bij ResetManagement, gespecialiseerd in verandermanagement en samenwerking: Hoe kun je vertrouwen en draagvlak creëren en samenwerken

Dutch NIA stakeholder workshop
RVO, Utrecht, 10. October 2017

Accomplishments since last meeting
Energy Service Expert Platform (subt. 19)

- ✓ A **series of teleconferences** with Task 16 experts to discuss and prepare a joint paper on life cycle cost benefit analyses of building deep energy retrofit in combination with Multiple Benefits
- ✓ **20th experts meeting**, held on 28-29 May 2017 in France ***(thank you Anne for your support!)***.
  The main agenda items were presentation and discussion of national implementation activities, discussions on current Think Tank topics (Deep Energy Retrofit, Life cycle cost appraisals, Multiple Benefits) and dissemination activities

Accomplishments since last meeting
ES Expert Platform + Dissemination (subt. 19 & 23)

- ✓ **Paper presentation as well a number of informal workshops at the ECEEE summer study**

LCC Training for loan officers in Belize_Sep.‘17

Accomplishments since last meeting
***Think Tank** (subtask 20)*

1. ***Life-Cycle Cost & 'Deep Retrofit' & Multiple Benefits:***

   Deep Energy Retrofits: Using Dynamic Cash Flow Analysis and Multiple Benefits to Convince Investors
   Published and presentated at ECEEE summer studies 2017

   *=> **Joint Task 16 paper** (in cooperation with IEA ECB Annex 61):*
   *=> **11 co-authors!***

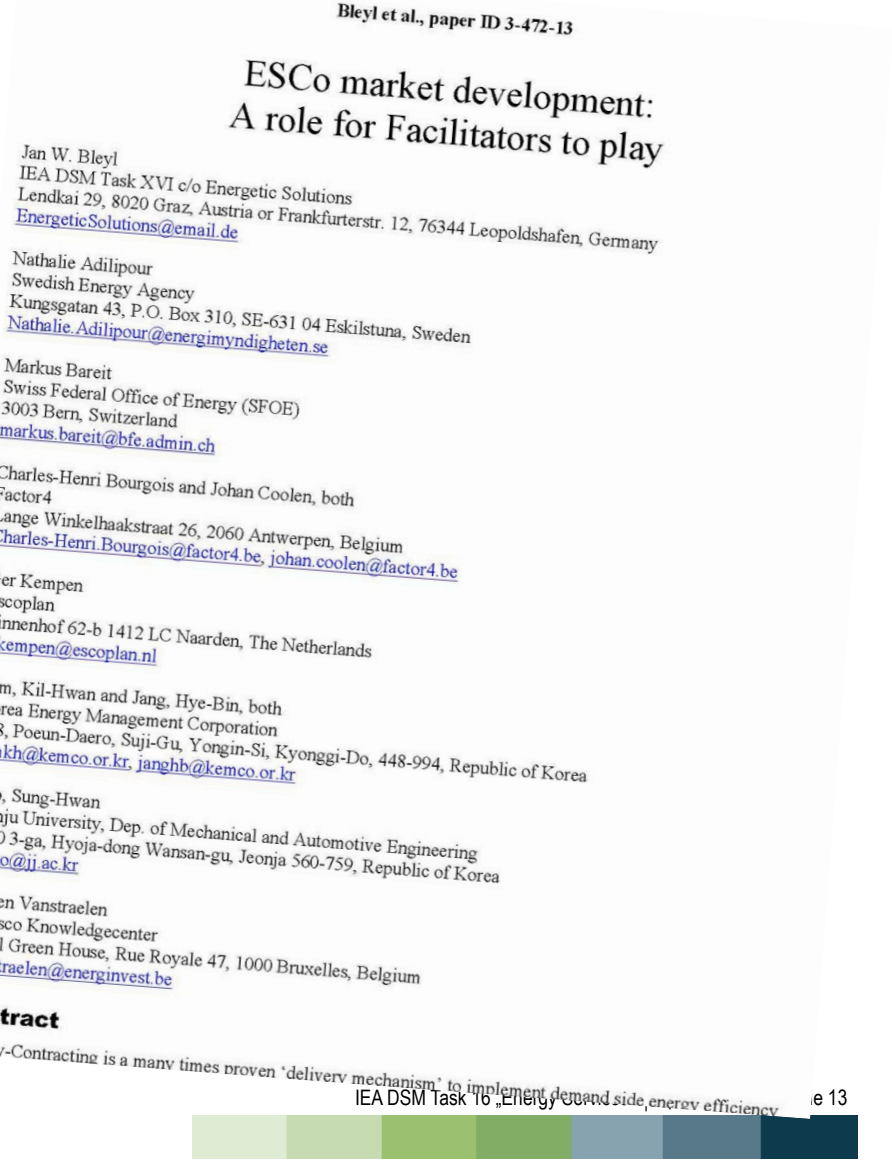
   Furthermore the paper was **selected for publication in a special edition of the Energy Efficiency journal**

Literature reference and webinar: Task 16 paper on the Role of ‚Facilitators‘

Bleyl, Jan W. et al.
ESCo Market Development: A Role for Facilitators to play
in ECEEE Summer Study, paper ID 3-472-13, Belambra Presqu'île de Giens, France June 2013

by **Adilipour; Bareit; Bleyl; Bourgois; Coolen; Kempen; Kim, Kil-Hwan; Jang, Hye-Bin; Cho, Sung-Hwan; Vanstraelen**

Leonardo ENERGY Webinar:
www.leonardo-energy.org/webinar/esco-market-development-role-facilitators-play



Bleyl et al., paper ID 3-472-13

ESCo market development:
A role for Facilitators to play

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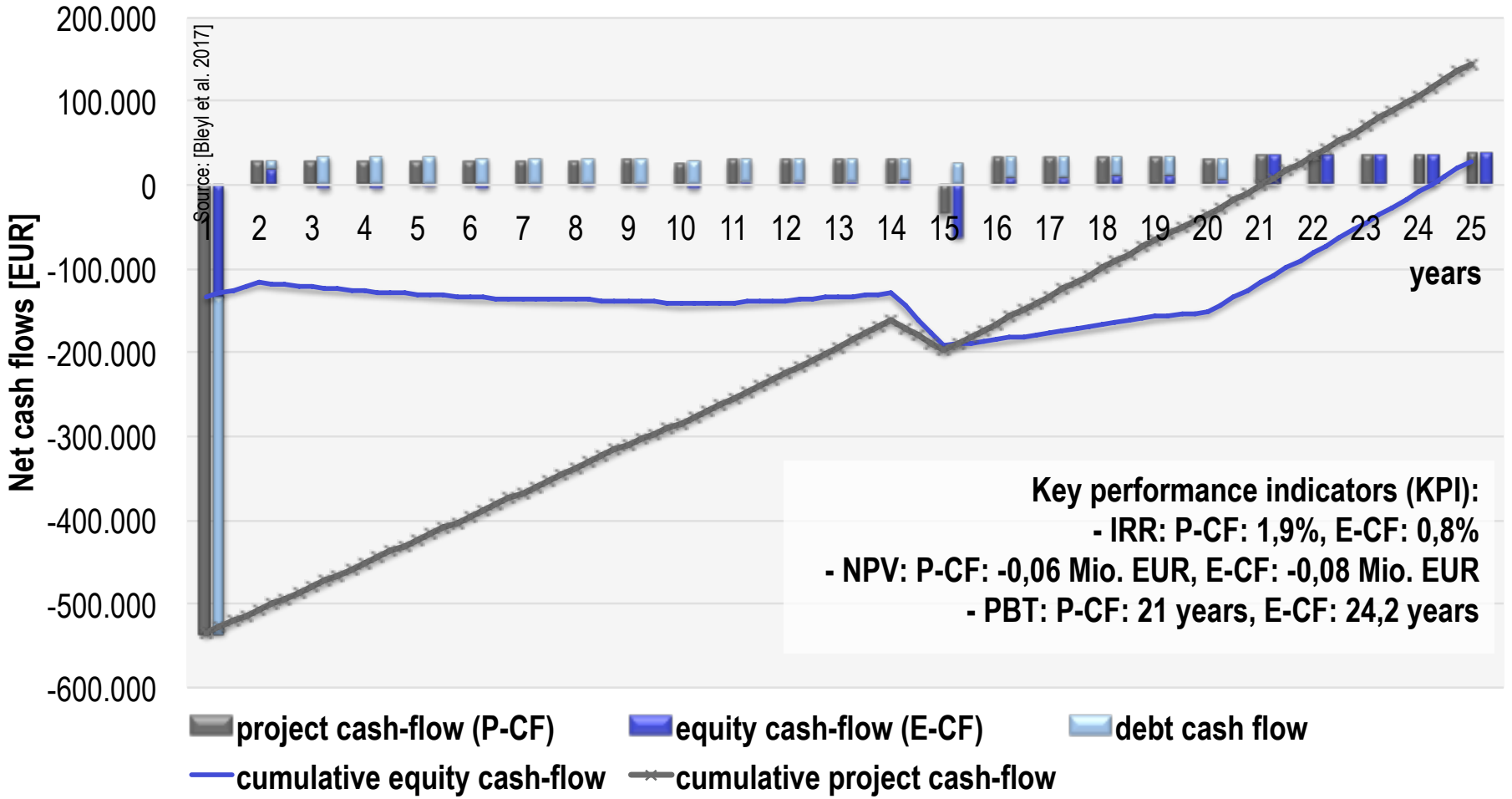
Abstract

Energy-Contracting is a many times proven 'delivery mechanism' to implement demand side energy efficiency

A ‚teaser' of our current work

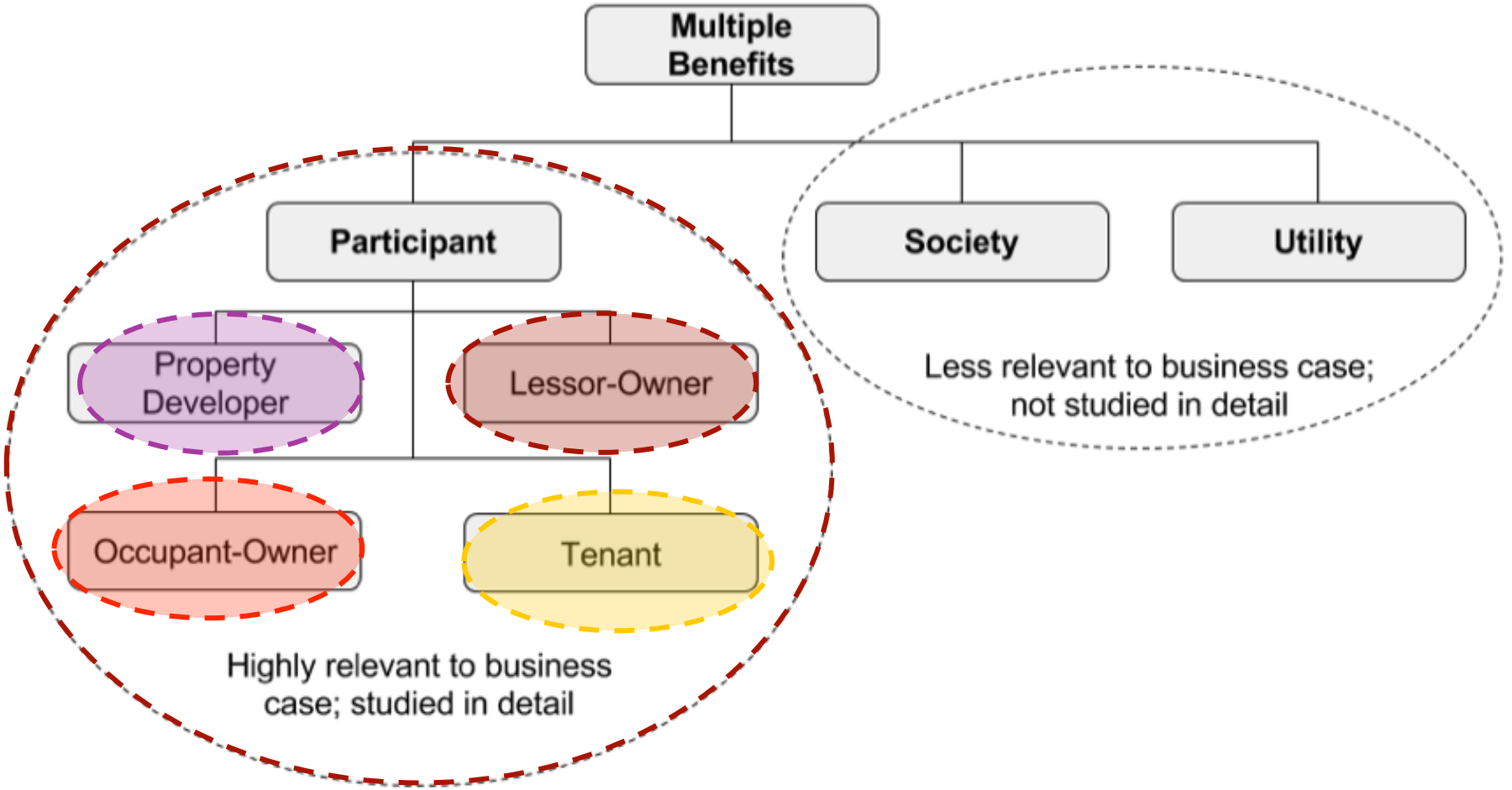
Multiple Project Benefits Methodology

DER case study: Net project, equity and debt cash flows (annual and cumulative)



[Source: Bleyl et al. 2017]

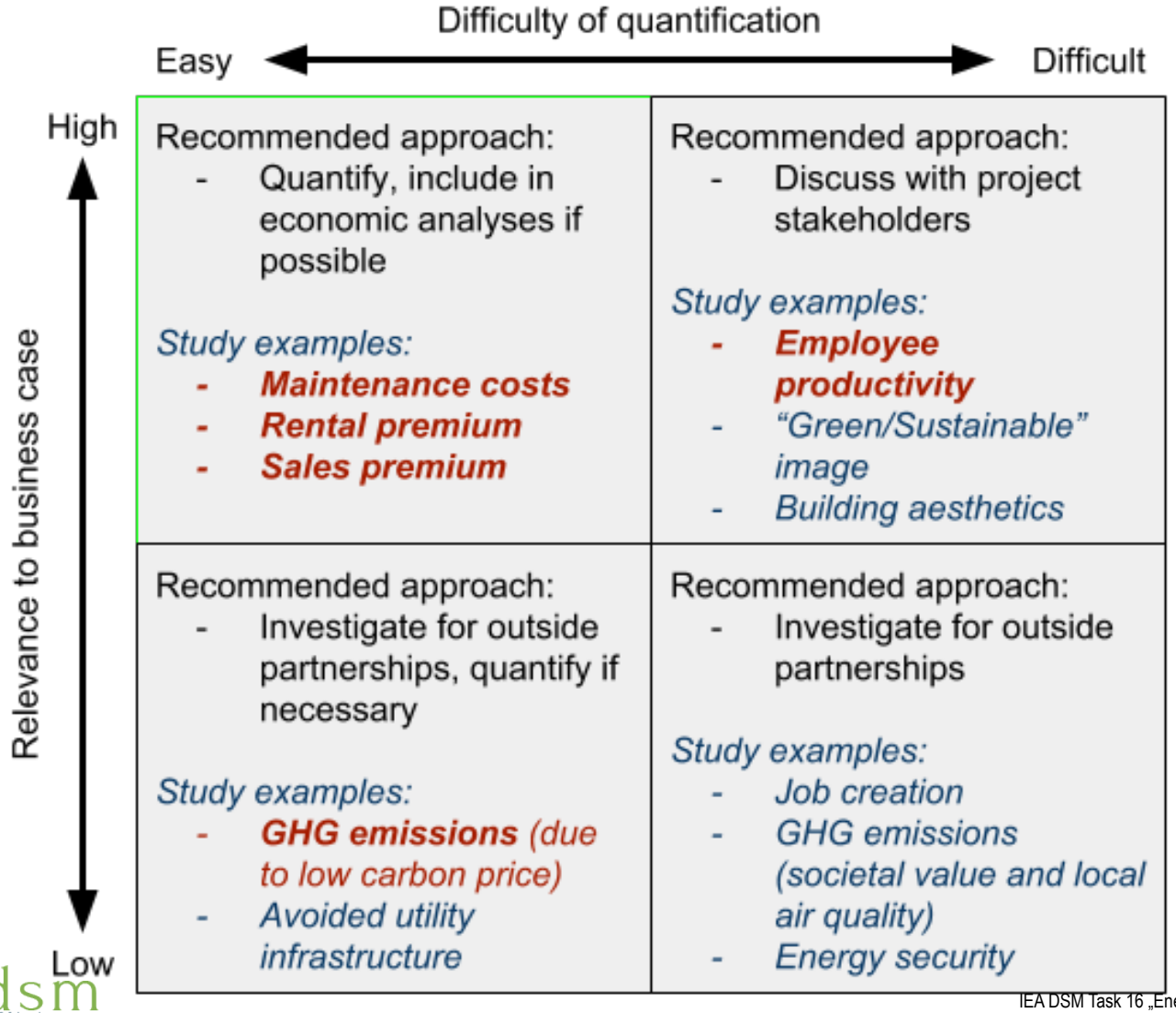
Classification of multiple benefits according to primary beneficiaries



[Source: Bleyl et al. 2017 based on Lazar & Colburn 2013]

=> „**Multiple Project Benefits** (MPB)“

Multiple Benefits classification grid



[Source: Bleyl et al. 2017]

Results: Monetarily valuated Multiple Project Benefits (MPB)

Multiple Project Benefits of DER	
1.	**Work productivity increase** (0.57% - 1.14%)
2a.	**Rental income increase** (1% - 5.3%)
2b.	**Building sales price increase** (2.5% - 6.5%)
3.	**CO_2 savings** (6 - 79 EUR/t)
4.	**Maintenance cost savings** (2.1 - 3 EUR/m2/y)
5a.	**Energy cost savings project term** (25 years)
5b.	**Add. energy cost savings over techn. lifetime** (40 y.)

Source: [Bleyl et al. 2017]

Pecuniary values of DER MPBs

2 Metrics: EUR/m² => per year & PVs of P-CF

Multiple Project Benefits of DER		Range	Valuation EUR/ (m² * y)	Valuation PV: EUR/m²
1.	**Work productivity increase** (0.57% - 1.14%)	Lower	10,4	219
		Upper	20,8	439
2a.	**Rental income increase** (1% - 5.3%)	Lower	1,2	25
		Upper	6,4	134
2b.	**Building sales price increase** (2.5% - 6.5%)	Lower	100	
		Upper	260	
3.	**CO_2 savings** (6 - 79 EUR/t)	Lower	0,3	6
		Upper	3,8	79
4.	**Maintenance cost savings** (2.1 - 3 EUR/m2/y)	Lower	2,1	44
		Upper	3,0	63
5a.	**Energy cost savings project term** (25 years)	Lower	16,8	354
		Upper	16,8	354
5b.	**Add. energy cost savings over techn. lifetime** (40 y.)	Lower	16,8	157
		Upper	16,8	157

Source: [Bleyl et al. 2017]

Annotations:

Conservative values!

Present values (PV) of project cash flows (P-CF) over 25 years; 1,5%/ year price increase; 3% WACC as discount rate.

To compare:

CAPEX (for energy retrofit only): **330 EUR/m²**

Pecuniary values of DER Multiple Benefits and accountability to different stakeholders

	Multiple Project Benefits of DER	Range	Valuation EUR/ (m^2 * y)	Valuation PV: EUR/m^2	Beneficiaries: Different owner perspectives — Property develop.	Occupant -owner	Lessor -owner	Tenant
1.	**Work productivity increase** (0.57% - 1.14%)	Lower	10,4	219	-	219	-	219
		Upper	20,8	439		439		439
2a.	**Rental income increase** (1% - 5.3%)	Lower	1,2	25	-	-	25	-25
		Upper	6,4	134			134	-134
2b.	**Building sales price increase** (2.5% - 6.5%)	Lower	100		100	[100]	[100]	-
		Upper	260		260	[260]	[260]	
3.	**CO_2 savings** (6 - 79 EUR/t)	Lower	0,3	6	-	6	-	6
		Upper	3,8	79		79		79
4.	**Maintenance cost savings** (2.1 - 3 EUR/m2/y)	Lower	2,1	44	-	44	44	-
		Upper	3,0	63		63	63	
5a.	**Energy cost savings project term** (25 years)	Lower	16,8	354	-	354	-	354
		Upper	16,8	354		354		354
5b.	**Add. energy cost savings over techn. lifetime** (40 y.)	Lower	16,8	157	-	157	-	[157]
		Upper	16,8	157		157		[157]
	Totals	Lower PV:			100	780	69	554
		Upper PV:			260	1092	197	738

Source: [Bleyl et al. 2017]

Accomplishments since last meeting
***Think Tank** (subtask 20)*

2. *Simplified Measurement and Verification Using Quality Assurance Instruments: A Proposed Concept for Energy, Water and CO_2-Saving Projects:*

=> The manuscript was returned from journal 'Applied Energy' editor and invited for enhancement and re-submission for peer-review and (hopefully) publication to the journal.
In close cooperation with EfficiencyOne, Nova Scotia, Canada.

*We also received an **invitation for publication of the sM&V paper in the planned IPMVP journal**, which will be exclusively dedicated to measurement and verification topics.*

Literature reference and IEA DSM webinar: Task 16 paper on DER and MPB

Bleyl, Jan W. et al.

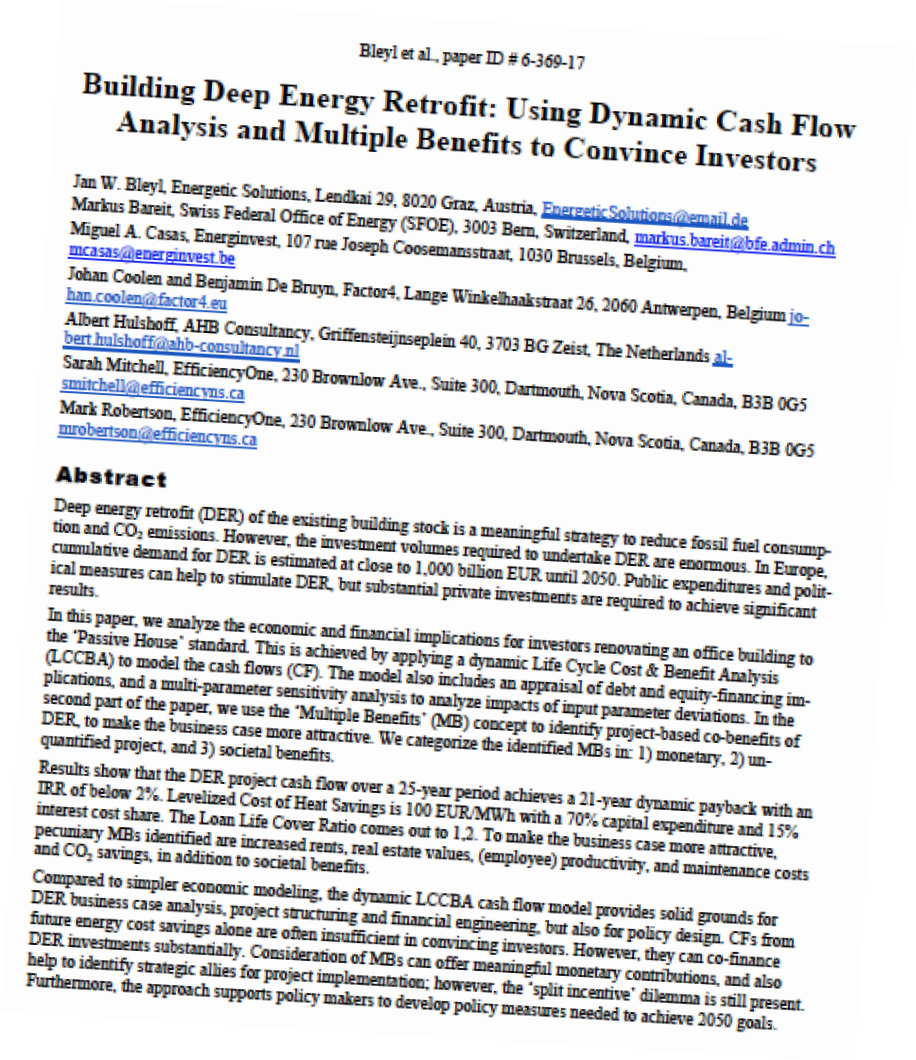
Building Deep Energy Retrofit: Using Dynamic Cash Flow Analysis and Multiple Benefits to Convince Investors

in ECEEE Summer Study, paper ID 6-369, Belambra Presqu'île de Giens, France June 2017

also accepted for publication in "**Energy Efficiency**" special journal 2018

Leonardo ENERGY Webinar:

https://www.youtube.com/watch?v=j344zdQTL4I&feature=youtu.be



Bleyl et al., paper ID # 6-369-17

Building Deep Energy Retrofit: Using Dynamic Cash Flow Analysis and Multiple Benefits to Convince Investors

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Abstract

Deep energy retrofit (DER) of the existing building stock is a meaningful strategy to reduce fossil fuel consumption and CO_2 emissions. However, the investment volumes required to undertake DER are enormous. In Europe, cumulative demand for DER is estimated at close to 1,000 billion EUR until 2050. Public expenditures and political measures can help to stimulate DER, but substantial private investments are required to achieve significant results.

In this paper, we analyze the economic and financial implications for investors renovating an office building to the 'Passive House' standard. This is achieved by applying a dynamic Life Cycle Cost & Benefit Analysis (LCCBA) to model the cash flows (CF). The model also includes an appraisal of debt and equity-financing implications, and a multi-parameter sensitivity analysis to analyze impacts of input parameter deviations. In the second part of the paper, we use the 'Multiple Benefits' (MB) concept to identify project-based co-benefits of DER, to make the business case more attractive. We categorize the identified MBs in: 1) monetary, 2) unquantified project, and 3) societal benefits.

Results show that the DER project cash flow over a 25-year period achieves a 21-year dynamic payback with an IRR of below 2%. Levelized Cost of Heat Savings is 100 EUR/MWh with a 70% capital expenditure and 15% interest cost share. The Loan Life Cover Ratio comes out to 1,2. To make the business case more attractive, pecuniary MBs identified are increased rents, real estate values, (employee) productivity, and maintenance costs and CO_2 savings, in addition to societal benefits.

Compared to simpler economic modeling, the dynamic LCCBA cash flow model provides solid grounds for DER business case analysis, project structuring and financial engineering, but also for policy design. CFs from future energy cost savings alone are often insufficient in convincing investors. However, they can co-finance DER investments substantially. Consideration of MBs can offer meaningful monetary contributions, and also help to identify strategic allies for project implementation; however, the 'split incentive' dilemma is still present. Furthermore, the approach supports policy makers to develop policy measures needed to achieve 2050 goals.

Accomplishments since last meeting Think Tank (subtask 20) (2/3)

2. ***Crowd-Financing for Energy efficiency and renewable investments**:* Can Crowd-Financing contribute to solve financing bottlenecks for EE and RE projects? E.g. through access to equity or (cheaper) debt financing? In particular for smaller projects in SME and communities? Bridge the mezzanine financing gap? Reduce risks and transaction cost? Analyses based on detailed LCC modeling of 2 case studies.

   => Report finalized in cooperation with GIZ and KRITTER Advisory Services

Accomplishments since last meeting Think Tank (subtask 20) (3/3)

4. ***Energy Services Taxonomy paper:*** Literature research continued for a Taxonomy paper on Performance-based Energy Services to be published in a peer-reviewed journal in cooperation with Linköping University

Accomplishments since last meeting

Coaching of NIAs *(subtask 22)*

Coaching of individual National Implementation Activities (NIA) (subtask 22)

- ✓ Implementation of the individual NIA plans to develop know how and energy service markets were followed up, the experts gave detailed presentations and exchanged experiences and good practices during the last platform meeting and through teleconferences in between meetings

Dissemination and coperations (subtask 22, selection)

- ✓ **Investor and ESCo manager training** in St. Kitts: Investment-grade Calculation & Analysis of Energy Projects *(Focus on Savings Model & Cooling Projects)*. Introduction & hands-on training in cooperation with GIZ
- ✓ Facilitation continued for an **industrial-scale Energy Efficiency Performance contract** for a steel manufacturer in North Africa
- ✓ **Co-operation** with other ongoing energy service projects and institutions:

  - ECB Annex 61 => 'Deep retrofit' business models
  - Linköping University => ES taxonomy and other topics
  - TU-Vienna, FH Pinkafeld - applied science university
    => Master class on energy services

Dissemination and cooperations (subtask 22, selection)

- ✓ **Integrated Utility Service (IUS) presentation and report on new business models for small island states in the Caribbean (in cooperation with GIZ and CARICOM) (June ’17)**

Activities + goals for next 6 month

Activities + goals for next 6 month
Energy Service Expert Platform (subtask 19)

- ✓ Preparation of the **20th experts meeting**, to be held on 28-29 May 2017 in France (back to back with ECEEE summer study 2017)
  The main agenda items will be presentation and discussion of national implementation activities, discussions on current Think Tank topics (Deep Energy Retrofit, Life cycle cost appraisals, crowd funding for EE and RE projects) and dissemination activities
- ✓ Continue to hold **Expert platform teleconferences** (on selected Think Tank topics, e.g. life cycle cost analyses for Deep Energy Retrofit => ECEEE paper)

Activities + goals for next 6 month
***Think Tank** (subtask 20)*

1. ***Life-Cycle Cost & 'Deep Retrofit' & Multiple Benefits**:*

   Office Building Deep Energy Retrofit: Life Cycle Cost Benefit Analyses using Cash Flow Analysis and Multiple Benefits on Project Level

   *=> **Finalization of submission for publication in a special edition of the Energy Efficiency journal***

   *=> Focus on **monetized Multiple Benefits of work productivity increase** (a.o. 'comfort meter')*

   In cooperation with IEA ECB Annex 61 & CEU University, Hungary)

   => 12 co-authors

Activities + goals for next 6 month
***Think Tank** (subtask 20)* *(cont'd)*

2. ***Simplified Measurement and Verification Using Quality Assurance Instruments: A Proposed Concept for Energy, Water and CO_2-Saving Projects***

=> Finalize submission for peer-review and (hopefully) publication to the Applied Energy journal

In close cooperation with EfficiencyOne, Nova Scotia, Canada (meaningful in-kind contribution!)

Activities + goals for next 6 month (cont'd)
***Think Tank** (subtask 20)*

3. ***Eurostat guidance note on public accounting rules for investments**:*

   "on-balance" and "off-balance" accounting treatment of investments

   => Internal webinar 24. April 2018

Activities + goals for next 6 month (cont'd)
***Think Tank** (subtask 20)* *(3/4)*

4. ***Crowd-Financing for Energy efficiency and renewable investments**:*

   Analyses of cases studies: Can Crowd-Financing contribute to solve financing bottlenecks for EE and RE projects? E.g. through access to equity or (cheaper) debt financing? In particular for smaller projects in SME and communities? Bridge the mezzanine financing gap? Reduce risks and transaction cost? Analyses based on detailed LCC modeling of 2–3 cases studies.

   In cooperation with GIZ and KRITTER Advisory Services

Accomplishments since last meeting (cont'd)
***Think Tank** (subtask 20) (4/4)*

5. ***Energy Services Taxonomy paper:*** Literature research continued for a Taxonomy paper on Performance-based Energy Services to be published in a peer-reviewed journal *in cooperation with Linköping University*

Activities + goals for next 6 month (cont'd)
***Coaching of NIAs** (subtask 21)*

Support and coaching of individual National Implementation Activities (subtask 21)

- ✓ Continue support and coaching of individual National Implementation Activities (NIA plans to develop energy service know how and markets
- ✓ To follow up, experts will give presentations and exchange experiences and good practices during the next platform meeting and through teleconferences in between meetings

Activities + goals for next 6 month (cont'd)
***Coaching of NIAs** (subtask 21)*

Support and coaching of individual National Implementation Activities (subtask 21)

- ✓ **ESCo market development in Switzerland:**
  Support in selection and preparation for a national pilot project for the Swiss Federal Office of Energy and its collaborating ministries (2nd opinion report)

Activities + goals for next 6 month (cont'd)
***Dissemination & cooperation** (subtask 22)*

Publications, presentations or workshops planned:

- ✓ **Integrated Utility Service (IUS) on new business models for small island states in the Caribbean** (in cooperation with GIZ and CARICOM)

Activities + goals for next 6 month (cont'd)
***Dissemination & cooperation** (subtask 22)*

Publications, presentations or workshops planned:

- ✓ **Vietnam**: Fact Finding Mission: Demand Side Energy (in cooperation with Electricity of Vietnam (EVN), October + November 2016)
- ✓ **Life-Cycle Cost-Benefit** workshop for evaluation of energy efficiency and renewable projects - an introduction (Vienna, October 2016)
- ✓ **Economic appraisals** to communicate between technicians and management. Methods, calculation and examples – an introduction. Seminar for energy technicians in industry (Gmunden, November 2016)
- ✓ Another Task 16 Leonardo ENERGY IEA **DSM University Webinar**

Dissemination and cooperation (subtask 22 cont'd)

- ✓ **Co-operation with other ongoing energy service projects and institutions:**
  - ⇨ ECB Annex 61 => Deep retrofit pre-feasibility and bankable project analyses
  - ⇨ Linköping University => ES taxonomy and other topics
  - ⇨ TU Wien => Guest lecture on energy services (Masterclass)
  - ⇨ Fh Pinkafeld (University of applied sciences) => Masterclass on energy services

Activities + goals for next 6 month (cont'd)
***Dissemination & cooperation** (subtask 22)*

- ✓ *Next Task 16 IEA DSM Webinar:*
  Deep Energy Retrofits: Using Dynamic Cash Flow Analysis and Multiple Benefits to Convince Investors

  => 23. November 2017, 15:00 CET

Activities + goals for next 6 month (cont'd)

Dissemination (subtask 17)

More Dissemination on an academic level?

- ✓ Energy Policy special issue?
- ✓ IEA DSM books?
- ✓ IEA secretariate books
- ✓ DSM university

Welcome to

Training on Bankable Calculation, Analyses and Financial Modelling for Sustainable Energy Investments

(for Efficiency and Renewable Projects)

Introduction & Hands-on Training

Jan W. Bleyl, Energetic Solutions

Simon Zellner, Energy Finance Advisor for GIZ REETA

Kingstown, Jamaica, 14 - 16 May 2018

Welcome to BL&P Kick-off Workshop:

Integrated Utility Services (IUS) Market Platform Model.
Business Model Development and Pilot Phase

Jan W. Bleyl, Cathy Dalmeida for Energetic Solutions
Simon Zellner, Energy Finance Advisor for GIZ REETA

Task 16 Budget vs. Expenditures

(as of 1 March 2018 excl. VAT)

Subtasks *unit*	Total budget *EUR*	Cumulative spending *EUR*	% spent *%*	Remaining *EUR*
19 Energy Services Expert Platform	**22.000**	**18.920**	**86%**	**3.080**
20 Think Tank for innovative Energy Services	**73.920**	**69.520**	**94%**	**4.400**
21 Coaching of National Implementation Activities	**14.520**	**14.960**	**103%**	**-440**
22 Dissemination & Cooperation (international + national)	**15.840**	**14.960**	**94%**	**880**
23 Management & Reporting (to ExCo)	**37.840**	**35.200**	**93%**	**2.640**
Subtotals	**164.120**	**153.560**	**94%**	**10.560**
Travel costs	**14.700**	**13.377**	**91%**	**1.323**
Other costs	**2.880**	**2.100**	**73%**	**780**
Totals	**181.700**	**169.037**	**93%**	**12.663**

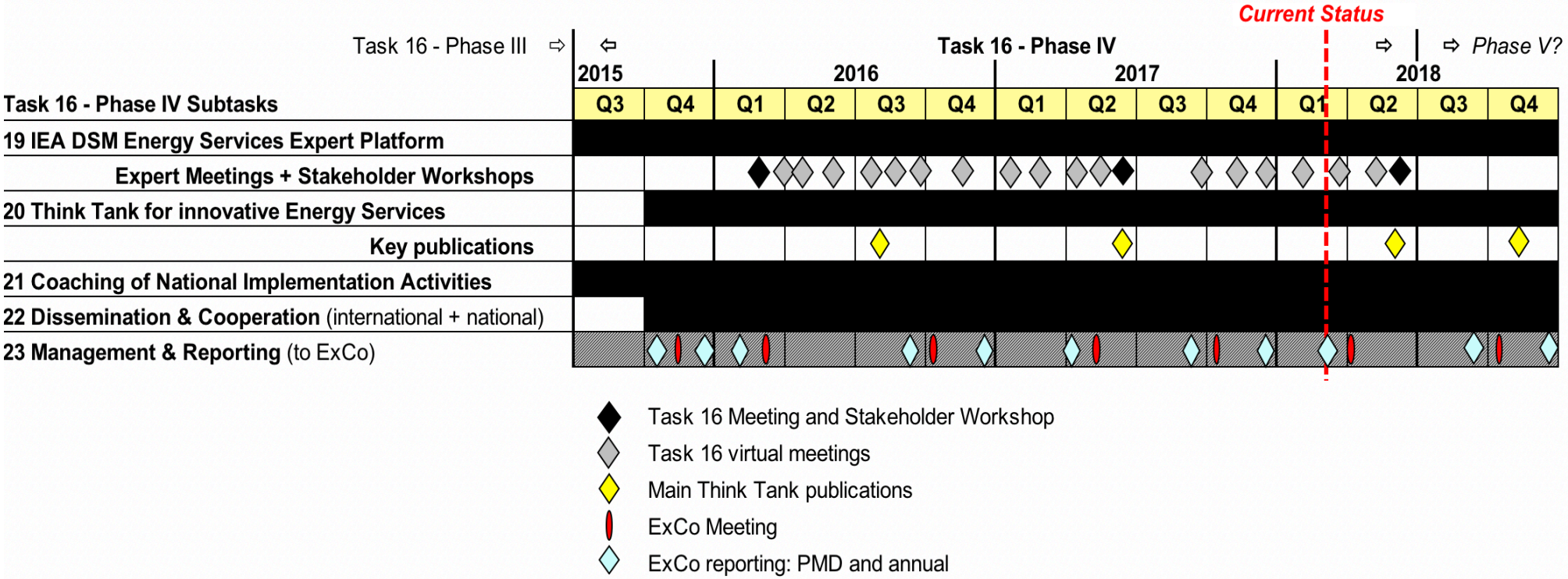
⇒ **Spending** of last reporting period: **28,032** EUR, adding to a **total expenditure of 169,037** EUR
(= 93% of total budget)

⇒ **Income** during last reporting period: **30,000** EUR (against **45,000 EUR billed**),

Task 16 - Phase IV
Activity time schedule update

Phase IV has started operation on 01 July 2015 and will end 30 June 2018

Task 16 - Phase IV Timetable (as of February 2018)



ENERGETIC SOLUTIONS

JAN W. BLEYL

energinvest

FACTOR 4 EFFICIENT IN ENERGY

e1 EFFICIENCY ONE

AHB Consultancy

Forsvarsbygg

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Confederation

Swiss Federal Office of Energy SFOE

ieadsm energy efficiency

Task 16 'Innovative Energy Services'

Thank you very much for your continued support!

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For more information, visit www.ieadsm.org

Matters for the ExCo

1. **Approve the Task Status Update Report**

2. **Provide guidance on future work after June 2018,**
   if desired by the ExCo (on content and lead/OA)**?**

Task 16, Phase V?
a possible outline

Think Tank topics and research questions for Task 16 Phase V

(1/2)

1. **Multiple Project Benefits: Focus on project level** (MPB) *(cont'd)*:
   - ⇨ How to integrate MPBs into Life Cycle Cost Benefit Analyses?
   - ⇨ How to make use of Multiple Benefits (MB) to promote EPCs?
   - ⇨ Application of MPBs concept to further business cases
2. **The role of the government as a 'Market Facilitator' to promote performance-based energy services:**
   - ⇨ Collection of best practices and lessons learned for future policy implementation
   - ⇨ Communication strategy: How to better sell EPCs? Learning from good practice
3. **Business model refinement for Energy Performance Contracting:**
   - ⇨ EPCs in SMEs e.g. Hotels and business parks
   - ⇨ Tackling the landlord-tenant dilemma

Think Tank topics and research questions for Task 16 Phase V

(2/2)

4. **Simplified M&V** (sM&V) *(cont'd)*
   - ⇨ Application of the sM&V concept in different end-use sector and its integration in performance-based business models.
   - ⇨ Continuing the exchange with the IPMVP technical committee
   - ⇨ Application of sM&V approaches for energy audits, compliance with ISO 50015 (in cooperation with Austrian Energy Agency.

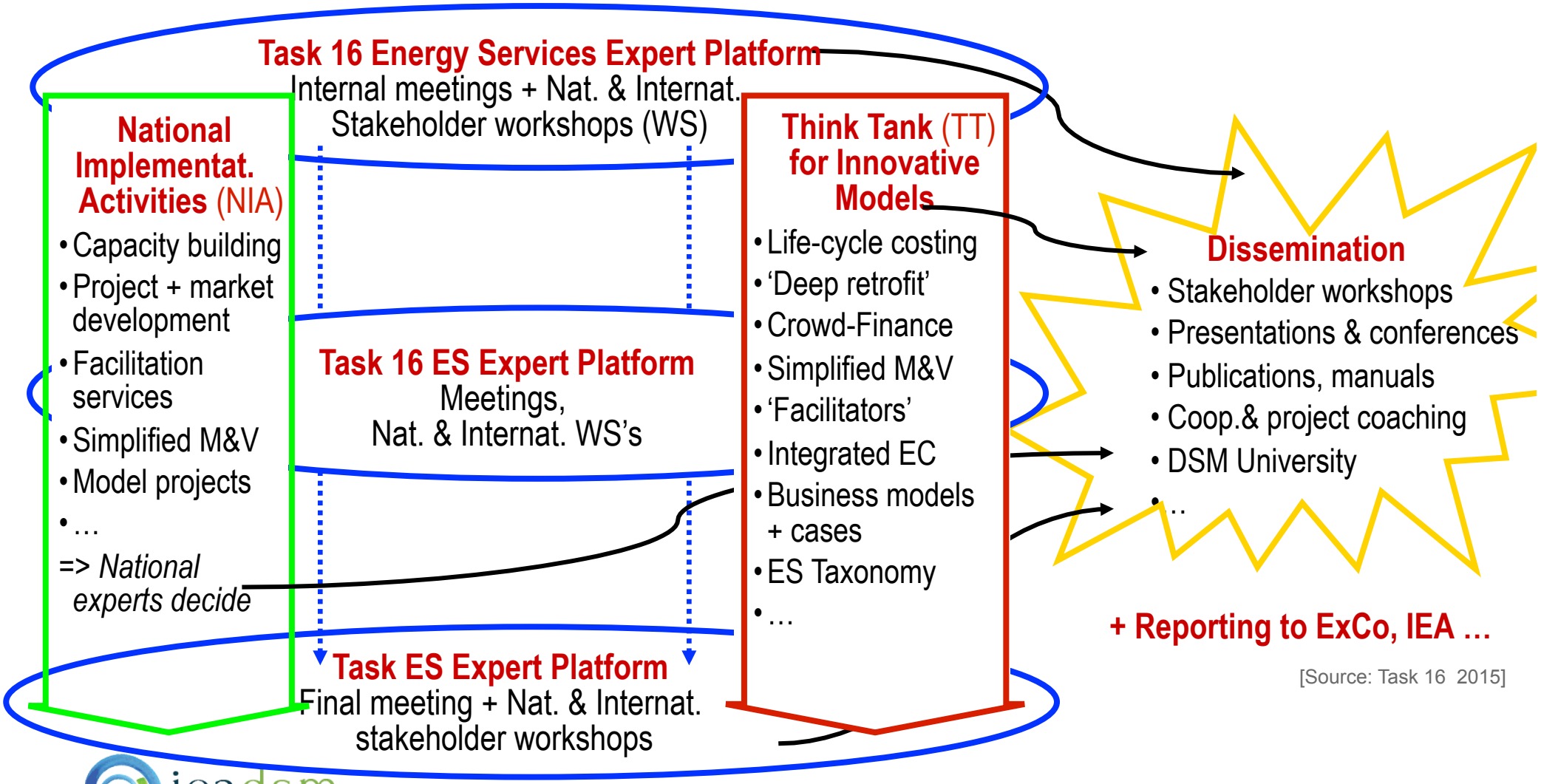
5. **Eurostat guidance note on public accounting rules for investments:**
   - ⇨ Demisitification of "on-balance" and "off-balance" accounting treatment of investments; Eurostat old and new rules for EPCs; Remaining outstanding questions/issues to be dealt with in expected practitioner's guide.

6. **Nearly Zero buildings:**
   - ⇨ Added value of performance-based services during operating?
   - ⇨ MBs like inside air quality (possibly in cooperate Annex 73, EBC)

Ideas for new work of the TCP

1. We would like to flag the topic of **Multiple Benefits** (MB) again. As we probably all agree, MBs offer very interesting perspectives on demand side energy efficiency and renewables and the opportunity to identify drivers and strategic allies for DSM programs and projects.
2. This approach is further encouraged by our work: In our recent paper we have developed a rather straight forward methodology how to factor MBs into a building Deep Energy Retrofit investment calculation by taking a look from a bottom up case study perspective. This approach could probably be transferred to other DSM topics as well. Results are turning out to be very interesting (among others with regard to the split incentive dilemma, where to put priorities and also for policy design).
3. This recent work reinforces my conviction that it is worthwhile and needed to put more applied research into MBs and that the DSM TCP could and should put it back on its agenda. If desired by the ExCo, Task 16 would be happy to help revitalize Task 26 (or any another format).

Continue in well established structure. With new Think Tank and NIA topics



[Source: Task 16 2015]

Task 16 Phase V: Required resources

Cost + task sharing:

1. **>4 countries**
2. **Cost sharing: 15,000 EUR/a/country**
3. **Task sharing: 0,5 – 1 person month/a**
   by **National Experts**

   for how long a project period?

Task 16 Phase V:
Expected inputs from national expert

- **Active participation and exchange of experiences** during our meetings (face to face or via telco)
- **6 to 12 monthly reports on your National Implementation Activities** regarding energy efficiency services (can be activities that you are already engaged with in your day to day work)
- **Peer review of publications/reports**, which OA prepares
- **Preparing short national perspectives** (2-4 pages) on the Think Tank topics prepared by the OA

ExCo Feedback DenHaag_10/2017

- **Belgium? probably**
- Canada: **Yes, in kind** (NE: Sarah Mitchel, Mark Robertson)
- **Netherlands: very likely** (NE: Albert Hulsfhoff)
- **Switzerland very likely** (MB, How to better sell?; Market Facilitator, Communication ...)
- **IEA secretariate**: Jeremy Sung: very positive response on MB paper. Publish in IEA global platform

‚Maybes':

- **Sweden:** Maybe

ExCo Feedback Bergen_04/2018

- **Australia:** ***No***
- **Belgium:** ***Quite unlikely***
- **Canada** *(in kind)*: ***Yes, in kind contributions***
- **Copper Institute:** ***„Like“*** *(but too early to convert product offerings into business services)*
- **Germany:** ***Interest by Federal Office for Economic Affairs and Export Control (Dr. Flegel)***
- **IEA secretariate**: ***very positive, in particular Multiple Project Benefits***
- **Ireland:** ***Could be of interest*** *=> Josephine will share and get back*
- **Italy:** ***Interesting but no funds***
- **Korea:** ***Maybe (Green technology)***
- **Netherlands:** ***Coop. with EBC? Paul Roosewelt EBC?*** *=> Gerdine will get back*
- **New Zealand:** ***„Like“ but No***
- **Norway:** ***Interested, extend MPB to footprint methodology?***
- **UK:** ***„Like“ but No***
- **Sweden: Currently not**
- **Switzerland**: ***„Very much in favor to continue this important task“***
- **US:** ***No opinion***
-

Literature reference and webinar: Task 16 paper on the Role of ‚Facilitators‘

Bleyl, Jan W. et al.
ESCo Market Development: A Role for Facilitators to play
in ECEEE Summer Study, paper ID 3-472-13, Belambra Presqu'île de Giens, France June 2013

by **Adilipour; Bareit; Bleyl; Bourgois; Coolen; Kempen; Kim, Kil-Hwan; Jang, Hye-Bin; Cho, Sung-Hwan; Vanstraelen**

Leonardo ENERGY Webinar:
www.leonardo-energy.org/webinar/esco-market-development-role-facilitators-play

Bleyl et al., paper ID 3-472-13

ESCo market development:
A role for Facilitators to play

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Abstract

Energy-Contracting is a many times proven 'delivery mechanism' to implement demand side energy efficiency

Task 16 Discussion Paper on Facilitators incl. national perspectives

ESCo Project and Market Development: A Role for 'Facilitators' to Play. Including National Perspectives of Task 16 Experts

by Task 16 experts **Adilipour; Bareit; Bleyl; Coolen; Jang, Hye-Bin; Kempen; Ungerböck**
with guest contributions by **Lohse**, KEA; **Borchard**, **Zellner**, GIZ

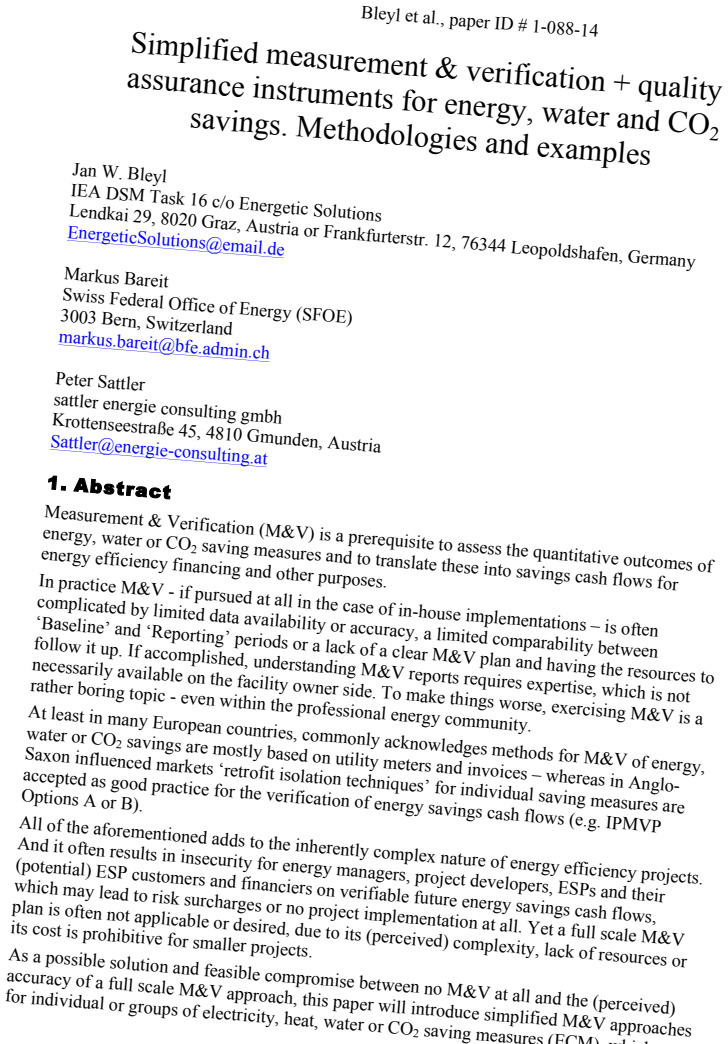
Task 16 discussion paper, May 2014

Download available from
www.ieadsm.org => Task 16

Task 16 paper on Simplified Measurement and Verification (M&V) of savings

Bleyl, Jan W. et.al
Simplified measurement & verification + quality assurance instruments for energy, water and CO_2 savings. Methodologies and examples accepted for publication at ECEEE Industrial Summer Study, paper ID 1-088-14, Arnhem, the Netherlands June 2014

by **Bareit; Bleyl; Sattler** and with **inputs from Task 16 experts**



Bleyl et al., paper ID # 1-088-14

Simplified measurement & verification + quality assurance instruments for energy, water and CO_2 savings. Methodologies and examples

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1. Abstract

Measurement & Verification (M&V) is a prerequisite to assess the quantitative outcomes of energy, water or CO_2 saving measures and to translate these into savings cash flows for energy efficiency financing and other purposes.

In practice M&V - if pursued at all in the case of in-house implementations – is often complicated by limited data availability or accuracy, a limited comparability between 'Baseline' and 'Reporting' periods or a lack of a clear M&V plan and having the resources to follow it up. If accomplished, understanding M&V reports requires expertise, which is not necessarily available on the facility owner side. To make things worse, exercising M&V is a rather boring topic - even within the professional energy community.

At least in many European countries, commonly acknowledges methods for M&V of energy, water or CO_2 savings are mostly based on utility meters and invoices – whereas in Anglo-Saxon influenced markets 'retrofit isolation techniques' for individual saving measures are accepted as good practice for the verification of energy savings cash flows (e.g. IPMVP Options A or B).

All of the aforementioned adds to the inherently complex nature of energy efficiency projects. And it often results in insecurity for energy managers, project developers, ESPs and their (potential) ESP customers and financiers on verifiable future energy savings cash flows, which may lead to risk surcharges or no project implementation at all. Yet a full scale M&V plan is often not applicable or desired, due to its (perceived) complexity, lack of resources or its cost is prohibitive for smaller projects.

As a possible solution and feasible compromise between no M&V at all and the (perceived) accuracy of a full scale M&V approach, this paper will introduce simplified M&V approaches for individual or groups of electricity, heat, water or CO_2 saving measures (ECM), which can

dena-Praxishilfe. Einsparnachweise im Energiespar-Contracting (Germany)

dena (German Energy Agency)
dena-Praxishilfe
Einsparnachweise im Energiespar-Contracting
(M&V for Energy Services, focus on simplified approaches)

by **Bleyl; Holz; Schenker**, March 2015

=> builds on our ECEEE 2014 paper, with reference to Task 16

Other national versions?