

IEA DSM Task 17 – Phase 3: Integration of DSM, DG, RES and ES

Task Status Report, ExCo Meeting, Graz, Austria

Matthias Stifter (AIT Energy Department, Austria)

René Kamphuis (TNO, The Netherlands)



IEA DSM Task 17 Phase 3

Table of contents

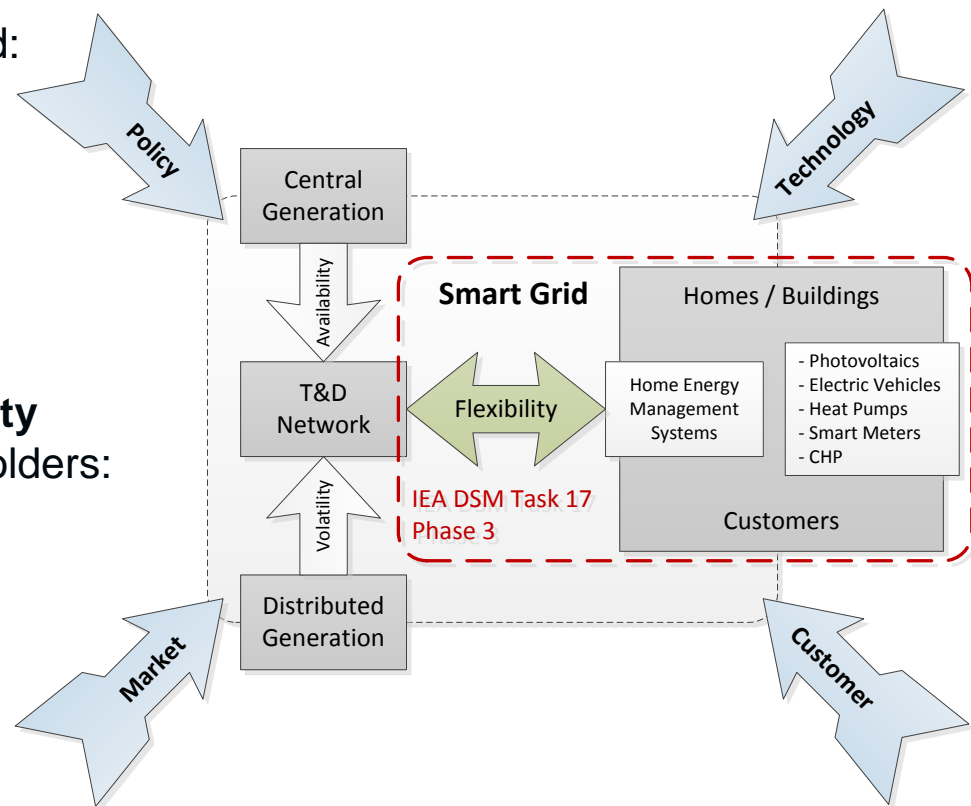
- SUMMARY
- OBJECTIVES FOR THE LAST SIX MONTHS
- OBJECTIVES FOR THE NEXT SIX MONTHS
- Experts meetings/seminars/conferences planned in the next six months
- Reports planned for the next six months
- OUTREACH
- FINANCE
- ACTIVITY TIME SCHEDULE
- Participating Countries

Task 17 Phase 3 - Summary

Systems view on enabling flexibility in the smart grid

- **Different views** on the Smart Grid:
 - Technology
 - Customer
 - Policy
 - Market

- Focus on the **enabling of flexibility** and the impact of it on the stakeholders:
 - What are the requirements?
 - How do we manage it?
 - How will it effect operation?
 - What are the benefits?



Subtask of Phase 3 – Overview of the Subtasks

Systems view on enabling flexibility in the smart grid

- **Subtask 10:** Role, and potentials of flexible prosumers (households, SMEs, buildings)
- **Subtask 11:** Changes and impact on stakeholders operations
- **Subtask 12:** Sharing experiences and finding best/worst practices
- **Subtasks 13:** Conclusions and recommendations

Progress Subtask 10 (1)

Role, and potentials of flexible prosumers (households, SMEs, buildings)

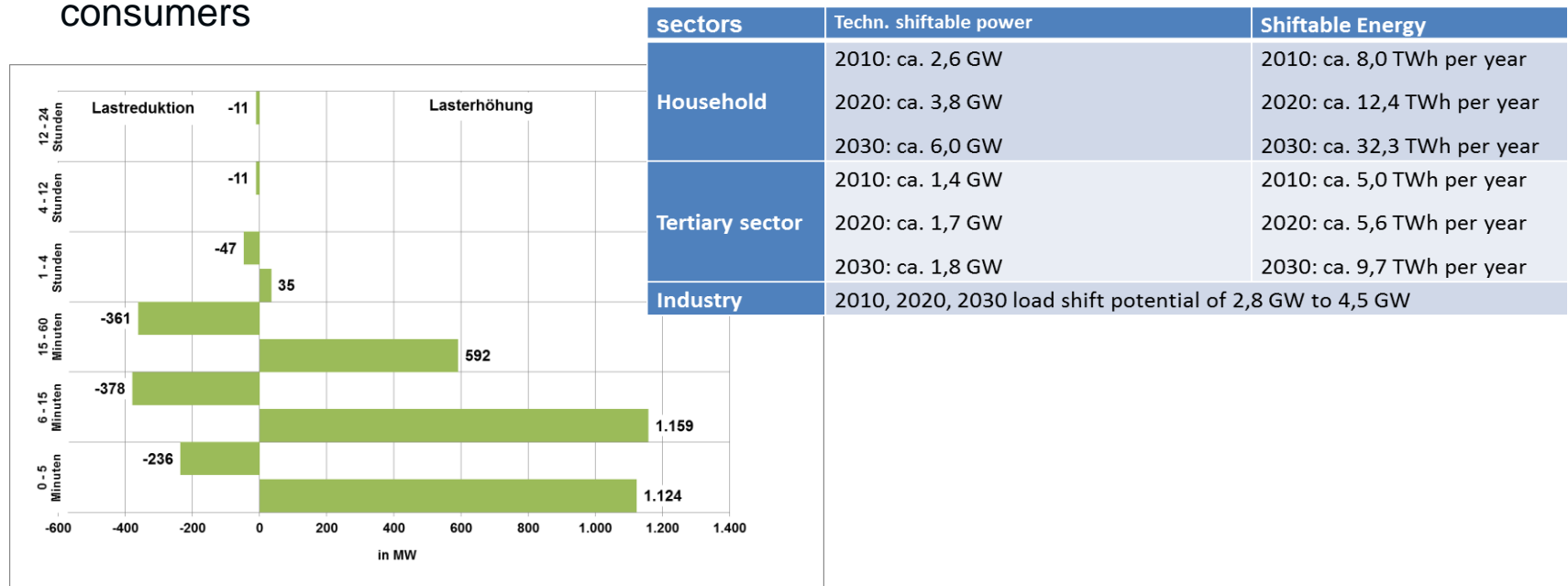
- A **metric for assessing projects** based on different properties (e.g., TRL) has been developed and will be review by the experts

short title (Framework Project)	country	start	end	level of implementation					level of commercialization				generator			storage			loads		concepts							control technologies				optimization/ aggregation										
				office building	residential building	industry	commercial building	public building	microgrid	research project	demonstration project	field test	existing practice	PV	μCHP	other	EV	battery	thermal	HVAC	household appliances	voltage support	positive SR (gen.)	negative SR (load)	demand bidding	time based rates	emergency services	self-consumption	customer behavior	direct control	ripple control	price control	EMS	manual	smart meter	technical optim.	commercial optim.	in-house optim.				
DFR	DK	2006	2008	x					x	x								x	x			x																	x			
Ecogrid	DK	2011	2014	x	x	x				x	x	x	x	x			x									x	x	x	x		x	x			x	x			x			
E-DeMa (E-Energy)	GER	2008	2013	x					x		x	x		x	x		x	x	x		x	x					x	x	x	x		x				x	x			x		
eflex	NL	2011	2012	x							x											x								x	x			x						x		
LINEAR	BEL	2009	2014	x					x		x			x	x	x	x	x	x	x	x					x												x	x			x

Progress Subtask 10 (2)

Role, and potentials of flexible prosumers (households, SMEs, buildings)

- An **international public workshop** (Workshop on DSM: Potentials, Implementation and Experiences) has been organized to discuss **potentials and flexibility** of consumers



Progress Subtask 12 (1)

Sharing experiences and finding best/worst practices

- An **international public workshop** “*Workshop on DSM: Potentials, Implementation and Experiences*” has been organized to discuss implementations and experiences of DSM and DR projects.

TUMORHJW TODAY

10:00	Welcome and opening words Introduction to EcoGrid and IEA DSM Task 17 - <i>Benoît Bletterie, Matthias Stifter</i>
10:10	DSM potentials of buildings Potentials of households, buildings and commercials
10:10	Buildings as interactive participants in Smart Grids: a demonstration project for DSM - <i>Georg Siegel (AIT, Austria)</i>
10:30	Load flexibility in small and medium enterprises and criteria for successfully enabling them - <i>Michael Wedler (BA.U.M. Consult, Germany)</i>
10:50	Load shifting in homes, industry and communities - <i>Michael Schmidthaler (JKU, Austria)</i>
11:10	What can the industry provide to enable DSM in buildings - <i>Werner Ziel (SIEMENS, Germany)</i>
11:30	Coffee Break
12:00	DSM for distribution networks DSM for integration of renewables and supporting network operation
12:00	Current status, issues and potentials in India , <i>Suryanarayana Doolla (IIT India)</i>
12:20	PowerMatching City II, Demonstration of multi-objective optimization in a living lab - <i>René Kamphuis (TNO, Netherlands)</i>
12:40	A Swiss perspective of DSM for electricity networks - Overview of ongoing projects - <i>Matthias Gallus (BFE, Switzerland)</i>
13:00	Lunch
14:00	DSM for market participation Participation and interaction with electricity markets
14:00	Quantifying the demand shift on the basis of statistical methods - first evaluation from the project EcoGrid EU - <i>Florian Judex (AIT, Austria)</i>
14:20	Analysis of the European Framework for Balancing Power - opportunities and new trends identified within the EcoGrid EU project - <i>Giannopoulos Georgios (ELIA, Belgium)</i>
14:40	Smart Grids and Energy Markets - <i>Jan Segerstam (Empower, Finland)</i>
15:00	eBADGE - Integrating the European electricity market - <i>Alexander Lurf (Cybergrid, Austria)</i>
15:30	Coffee Break
16:00	DSM for market participation (continued) / DSM and Electric Vehicles
16:00	Residential real-time pricing experience - <i>Steve Widingren (PNNL, USA)</i> Electric Vehicles as a resource for demand response
16:20	Smart Grids Model Region Salzburg: Implementation and experiences of controlled e-car charging - <i>Markus Radauer (Salzburg Netz, Austria)</i>
16:40	Active DSM by forecasting - <i>Christoph Maier (TU-Wien ESEA, Austria)</i>
17:00	Round Table Discussion Discussion with the presenters



Experts meetings/seminars/conferences

- Experts meeting

Date	Place	# of Experts	Type of meeting	Government	Industry	Academic
19. 5. 2014	Graz, Austria	9	<u>Kick Off</u>	1	2	6

- Seminars / Conferences

Date	Place	Participants	Type of meeting	Government	Industry	Academic
20.5.2014	Graz, Austria	70+	<u>Public Workshop</u>	20	25	25
10.6.2014	Brussels, Belgium	50+	Belgian meeting organized by ExCO	20	25	5

Reports / Publications

- Review on the ‘Workshop on DSM: Potentials, Implementations and Experiences’ will be proposed for the IEA DSM Spotlight.

Review of the Workshop on DSM Potentials, Implementations and Experiences

Matthias Stifter (AIT), René Kamphuis (TNO)

During the Austrian Smart Grids Week in May 2014, the IEA DSM Task 17 and the European project EcoGrid EU jointly organised a workshop to foster the exchange between experts and stakeholders.

The workshop was intended to present latest activities in the field of active demand response (DR) and demand side management (DSM). The IEA DSM Task 17: "Integration of Demand Side Management, Distributed Generation, Renewable Energy Sources and Energy Storages" and the European project "EcoGrid EU" jointly organized this workshop. The contributions are structured into four blocks which will cover "DMS potentials of buildings", "DSM for distribution networks", "DSM and market operation", "DSM and electric vehicles" and a panel discussion with the presenters.

Over 70 participants from 15 different countries have been attending the workshop and a very positive feedback was received afterwards. Presentations have been put online and are available at: <http://www.ieadsm.org/ViewTask.aspx?ID=16&Task=17&Sort=0#anc1254>

Contents

Review of the Workshop on DSM Potentials, Implementations and Experiences.....	1
1 Introduction.....	2
2 DSM potential of buildings.....	3
3 DSM for distribution networks.....	5
4 DSM for market participation.....	8
5 DSM and EV.....	13
6 Round Table Discussion.....	15
7 Summary of the workshop.....	16

Objectives for the next six month

- Subtask 10 - Role and potentials of flexible consumers
 - OAs prepare document and collect information from experts.
- Subtask 11 - Changes and impacts on grid and market operation
- Subtask 12 - Sharing experiences and finding best practices
 - OAs prepare use case collection list and send out for comments

Experts meetings planned in the next six months

meetings/seminars/conferences

- Planned Experts meetings

Date	Place
17. 9. 2014	Webconference Expert Meeting
3./4. 11. 2014	Expert Meeting (The Netherlands)

- Planned seminars/conferences

Date	Place
22.-23. 10. 2014	IEA EGRD Meeting, Germany, Berlin

Reports/Publications planned for the next six months

meetings/seminars/conferences

- Planned Experts meetings
 - Webinar: Contribution to *DSM University* tackling task 17 objectives and previous findings.
 - (Conference article about state of the art / projects in DR of participating countries)
 - Contribution to IEA Expert Group R&D Workshop in Berlin, Germany (Matthias)

Outreach

- Workshop on DSM in Graz, Austria organized (70+ participants)
→ Contacted from **ENA, France** on behalf of the **Seoul Metropolitan Government**.
- Ongoing exchange with **potential new participating countries**
 - Contact with Serbia – no funding but high interest
 - Contact with German Ministry for participation in DSM IA and Task 17 – re-considering joining the IA
 - Contact with experts from Finland
- Workshop about *'Energy Demand-Side Management in Belgium in the context of the EU Energy Efficiency Directive and beyond: how can IEA DSM help defining our future energy system?'* in Brussels, Belgium attended (10.6.2014 - René)
- Workshop on *'Smart Cities and Smart Grids'* for Seoul Metropolitan Government (SMG) was organized at AIT and Task 17 was presented (11.6.2014 - Matthias).
- Member of the *'Power Systems Flexibility Advisory Panel'* for Ecofys study (Matthias)

Finance

IEA-DSM Task 17 – Phase 3

- Realization
 - AIT: approximately 55k/16k Euro All / last 16 month
 - *TNO: approximately 14292/6804 Euro All / last 16 months*
- Finance and invoices to the participating countries have to be fixed at the next expert meeting after the ExCo meeting when the final participation commitment has been settled. Offers have been sent or will be sent in the next weeks.

	Country	Commitment	Offer	Contractpartner	Signed	Contact
1	Austria	Y	(Y)	AIT	Y (OA and CR together)	
2	Switzerland	Y	N	AIT	N	
3	Swede	Y	Y	TNO	N	
4	Copper Alliance	Y	Y	TNO	N	
5	The Netherlands	Y	Y	TNO	Y	
6	USA	Y	N	AIT	N	
7	Italy	N	Y	TNO	N	Rene
8	Belgium	N	N	TNO	N	Rene
9	Serbia	N	N			Matthias
10	India	N	N	AIT	N	Matthias
11	Germany	N	N	AIT	N	Matthias
12	Finland	N	N			Matthias/Rene

- Vito in Belgium decides before November 2014 on participation.
- RSE is the contract partner for Italy, while factoring is to the University of Ancona (Prof. Comodi is the country expert).

Activity Time Schedule

IEA-DSM Task 17 – Phase 3

- the task delayed by 3 month and time plan has to be updated accordingly

IEA-DSM TASK XVII - Phase 3	Q1 14	Q2 14	Q3 14	Q4 14	Q1 15	Q2 15	Q3 15	Q4 15
Subtasks								
Subtask 10 - Role and potentials of flexible consumers	■	■	■	■				
Subtask 11 - Changes and impact on the grid and market operation				■	■	■	■	
Subtask 12 - Sharing experiences and finding best practices	■	■	■	■	■	■	■	
Subtasks 13 - Conclusion and recommendations								■
Expert meetings								
Biannual country expert meeting	■		■		■		■	
Workshops								
Workshops with stakeholders and experts			■				■	
Reports								
Subtasks reports			■				■	
Final report								■

Participating Countries

IEA-DSM Task 17 – Phase 3

	Country	Commitment	Offer	Contract partner	Signed	Remark
1	AU	Y		AIT	Y	
2	CH	Y	(Y)	AIT	N	
3	S	Y	N	TNO	N	
4	Cop. All.	Y	Y	TNO	N	Reminder Poland
5	NL	Y	Y	TNO	Y	
6	US	Y	(Y)	AIT	N	
7	Italy	N	Y	TNO	N	Reminder Ancona
8	Belgium	N	N	TNO	N	Decision in October
9	Serbia	N	N			Invite in November → no budget / web dial in
10	India	N	N	AIT	N	Find appropriate ExCo contact person
11	D	N	N	AIT	N	Ministry economic affairs contacted; workshop presentation EGRD Berlin 21-23 october
12	Finland	N	N			Contact Jan Stegersam
13	Australia	N	N	-	-	Progress?

AIT Austrian Institute of Technology

**TNO Netherlands organization for
science and technology**

Matthias Stifter

René Kamphuis

Energy Department
Complex Energy Systems

Energy efficiency program
Service enabling and management

Giefinggasse 2
1210 Vienna
Austria
T +43(0) 50550-6673
M +43(0) 664 81 57 944
F +43(0) 50550-6613
matthias.stifter@ait.ac.at
<http://www.ait.ac.at>

Eemsgolaan 3,
9727 DW Groningen
T +31 (0) 621134424
PO Box 1416
9701 BK Groningen
The Netherlands
rene.kamphuis@tno.nl
www.tno.nl