

DSM Task 17 – Phase 3

Status Report 2014-09-12

Integration of Demand Side Management, Distributed Generation, Renewable Energy Sources and Energy Storages

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1. SUMMARY

Phase 3 of IEA-DSM Task 17 will address the current role and potential of flexibility in electricity demand and supply of systems of energy consuming/producing processes in buildings (residential, commercial and industrial) equipped with DER (Electric Vehicles, PV, storage, heat pumps, ...) and their impacts on the grid and markets. The interdependence between the physical infrastructure of grid and the market side will also be looked upon. The scalability and applicability of conducted and ongoing projects with respect to specific regional differences and requirements will be explored (see <http://www.ieadsm.org/ViewTask.aspx?ID=16&Task=17&Sort=0>).

2. OBJECTIVES FOR THE LAST SIX MONTHS

Generally the task started with a delay of more than 3 month. Therefore some corrections to the time plan must be taken within the next task meeting.

Subtask 10 – Role and potentials of flexible consumers

Assess the concepts and implementations of customer and home energy management systems (CEMS/HEMS), possibly linked to the smart meter, in different (participating) countries by:

- Comparing DR and DG specific requirements in households, communities, functional (office) buildings and industrial processes
- Role of Smart Meters (SM), (CEMS/HEMS gateways) and their interaction with flexible demand/supply devices as well as distributed energy resources in the terms of technical concepts
- Role of telemetry and existing process control systems and their interface to the HEMS or SM
- Evaluating strengths and weaknesses of ICT enabled aggregations of flexible demand and controllable DERs in the form of energy communities

Progress towards Subtask objectives

- A metric for assessing projects based on different properties (e.g., TRL) has been developed and will be review by the experts
- An international public workshop (Workshop on DSM: Potentials, Implementation and Experiences) has been organized to discuss potentials and flexibility of consumers

Subtask 11 - Changes and impacts on grid and market operation

Assess the impact on grid and market operation based on technology penetration scenarios developed in subtask 5 and 9 (developed in phase 2) by investigating the following areas of interest:

- Energy balancing possibilities and potentials for commercial and grid operation optimization objectives of CEMS.
- Optimization potentials from a technical and market point of view using the SGAM framework
- Design a methodology to estimate potential and to cost effective activation in-line with SGAM and SGMM.
- Regulatory and market design issues for grid and (local) market operations

Progress towards Subtask objectives

Progress in last six months

Subtask 12 - Sharing experiences and finding best practices

Based on the collected pilots and case studies from the previous subtasks, the results and findings of the finished projects in term of successful implementations, barriers and effectiveness will be analyzed.

- Lessons learned from existing pilots derived from workshops (e.g.; E-Energy Germany, EcoGrid-EU Bornholm, PowerMatchingCity-I and –II, NL-TKI, model city Salzburg, Amsterdam SmartCity, ...)
- Innovation projects with large scale demand response in industry
- Comparisons and analysis of country specific differences in the implementation
- Assessment and development of a methodology to apply different demand response mechanism to individual countries.
- Extrapolation of the results from previous collected projects on applicability on a large scale.

Progress towards Subtask objectives

- An international public workshop (Workshop on DSM: Potentials, Implementation and Experiences) has been organized to discuss implementations and experiences of DSM and DR projects.
- A comprehensive list of recent studies and project developments has been started and evaluated.

Subtask 13 – Conclusion and Recommendations

Recommendations will arrived at in close interaction with the experts' opinions and will at least provide a ranking based on impacts, costs and likely future penetration of the technologies.

Progress towards Subtask objectives

This Subtask has not yet commenced.

Experts meetings/seminars/conferences held in past six months

These tables are important for our report back to the EUWP, including the number of attendees and what sector they represented.

Experts meetings

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

Seminars/Conferences

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

Reports produced in the past six months

Mention here all publications (reports, articles, blogs, columns, webinars etc.) that you have produced in the last 6 months. Include detail on what type of publication it is.

Review on the '[Workshop on DSM: Potentials, Implementations and Experiences](#)' will be proposed for the IEA DSM Spotlight.

3. OBJECTIVES FOR THE NEXT SIX MONTHS

Again, only fill in the Subtasks you will work on in the coming 6 months.

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

Subtask 13 - Conclusion and Recommendations

Experts meetings/seminars/conferences planned in the next six months

Example:

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

- 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)

4. OUTREACH

Note any other outreach activities (on top of the seminars, conferences, workshops and publications mentioned above). This can include social media outreach or meetings with funders or experts. You can also mention any particular success stories based on feedback you have received about your Task here.

- 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
 - o Contact with Serbia – no funding but high interest
 - o Contact with German Ministry for participation in DSM IA and Task 17 – re-considering joining the IA
 - o 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 ‘*Flexibility in Power Systems Advisory Panel*’ for Ecofys study (Matthias)

5. IDEAS FOR NEW WORK

Particularly future research based on your Task findings. Identify if it would lead to a potential Task extension or a new Task.

6. FINANCE

Update of your budget since the last Status Report (total spend to date, spending in last 6 months, income in last six months, total income. Indicate if budget/progress are on track).

Realization AIT: approximately 55k/16k Euro All / last 16 month

Realization 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).

7. ACTIVITY TIME SCHEDULE

As mentioned above 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								

8. MATTERS FOR THE EXCO

Recommend the ExCo to approve the Task Status Update Report'.

9. PARTICIPATING COUNTRIES

Status of participating countries:

Country	Commitment
Austria	Y
Switzerland	Y
Swede	Y
Copper Alliance	Y
The Netherlands	Y
USA	Y
Italy	N
Belgium	N
Serbia	N
India	N
Germany	N
Finland	N