



**INTERNATIONAL ENERGY AGENCY
DEMAND SIDE MANAGEMENT PROGRAMME
TASK XIII: DEMAND RESPONSE RESOURCES**

Final Task XIII Status Report

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EXECUTIVE SUMMARY

Task XIII successfully completed all Task requirements.

The Task was asked to develop a variety of tools that help facilitate the inclusion of demand response into liberalized markets. Task XIII participants accomplished this by creating a step by step method for developing a Demand Response (DR) strategy. The method starts by looking at the market environment, estimates the available market potential, estimates the DR resource value, and discusses a number of operational issues (e.g. technologies, business models, and products). All of this is contained in the *Task XIII Project Guidebook*.

Task XIII is one of the most complex and comprehensive Tasks undertaken by the IEA DSM Programme. The Task scope spanned multiple industry disciplines. For example, the Task touched areas such as market and product design, economic valuations, marketing, business models, and technologies. This broad scope required the input and participation from a variety of industry experts.

Task XIII was the most broadly represented Task of all IEA DSM Tasks. Task XIII represented 12 different countries on 4 continents and 9 native languages. The diversity in customs, languages, and geographic footprint made for a number of project management challenges. While English was the official language of the Task, this did become an issue at times when English was a distant second language for the participant.

Task XIII attempted to mitigate the logistical challenges by creating a Project Portal website (www.demandresponseresources.com). The website houses all project materials including reports, tools, research library, and the *Task XIII Project Guidebook*. Some participants have commented that the project portal contains the largest amount of information about demand response in one spot. As result, Task XIII will be the first IEA DSM Task to create a sustainability strategy. The project portal will remain operational going forward on a subscription basis in order to preserve the information and knowledge therein. The portal will be enhanced in the future in an effort to create a Demand Response Center of Excellence.

The process described in the *Task XIII Project Guidebook (Guidebook)* can be used by any market actor that considers participating in the demand response marketplace. The Guidebook provides insights on how DR works and what challenges they should avoid. The Guidebook can also be used as a continuing education textbook for energy industry professionals.

Each of the project tools described in the *Guidebook* is able to be used as a stand alone tool as well. For example, the DR Market Potential Calculator (see Guidebook Chapter 4) can provide an inexpensive, but reasonable estimate of DR market potential in a given market. This tool can be implemented in a few hours whereas normal market potential studies could take several months.

The Operating Agent is proud of the work the project participants did on this Task and is certain that many of the elements created in the Task will live on for a long time if they are adequately promoted to the industry.

BACKGROUND

The International Energy Agency's Demand Side Management Programme (IEA-DSM) is an international collaborative consisting of 17 member nations plus the European Commission. IEA-DSM was created to develop and promote opportunities for demand-side management (DSM). This is accomplished by providing a "tool-box" to help governments and utilities in their work to make energy systems more suited to their purpose.¹

IEA-DSM is organized into a series of Tasks (aka projects). Each Task has a specific set of objectives and corresponding work plan. Task ideas are submitted to the IEA-DSM Executive Committee (ExCo) for consideration. Each of the IEA-DSM members assesses the merits of the proposed Task and then determines whether their nation will participate in the Task. If a proposed Task receives sufficient interest from the ExCo it is formally approved.

Once approved, a Task is governed and funded by the team of ExCo members participating in the Task. The ExCo members also designate one or more subject member experts to participate in the Task and perform the required work on behalf of their country. The subject matter experts are known as Country Experts (CE).

TASK XIII INTRODUCTION

Task XIII: Demand Response Resources (Task XIII) was formed to review demand response practices in the participating member nations and develop "tools" that help integrate demand response into regular liberalized market activities.

Task XIII was initially conceived in the spring of 2003. After several workshops and work plan iterations the Task was submitted to the IEA-DSM ExCo for consideration in the fall of 2003. The ExCo officially approved Task XIII at the April 2004 ExCo meeting. At this time, the ExCo appointed Ross Malme, CEO, RETX Energy Services (USA), as the Task Operating Agent.

Initial participating countries in the Task were Australia, Denmark, Finland, Italy, Japan, Korea, Netherlands, Norway, Spain, Sweden and the USA. Unfortunately, Japan decided

¹ <http://dsm.iea.org/NewDSM/home2.asp>

to withdraw from the IEA DSM Programme effective September 2005, and therefore they have withdrawn from Task XIII. Canada officially joined Task XIII around the same time.

In keeping with the IEA-DSM “toolbox” concept, Task XIII set out to identify and/or develop methodologies and tools that can be used to evaluate ways to include DR in a liberalized market. Several tools were ultimately created including:

- *Task XIII Project Guidebook (Guidebook)*
- Online research library
- Market potential benchmarks and related DR Market Potential Calculator
- DR valuation methodology
- DR technology database
- DR product database

Just as a hammer and a screwdriver serve different purposes, each of the Task XIII tools were designed for a specific element of DR strategy development. But, when the tools are used together, they are able to help users generate a sound DR strategy.

In order to unify all of the tools, the *Task XIII Project Guidebook* was created to guide the reader through the purpose and thought process behind the various tools. This tool can be used to create a regional, national or local DR strategy, and it can also be used as a training guide to educate energy industry professionals on demand response.

To complete these tools, Task XIII held six Country Expert Meetings. The meetings were hosted in Valencia, Spain; Milan, Italy; San Francisco, USA; Stockholm, Sweden; Melbourne, Australia; and Amsterdam, Netherlands. Project participants also participated in targeted workshops and numerous teleconferences.

SUBTASK LIST

The Task XIII work plan was structure so that the participant could go through the steps required to assess strategies for including DR in their market. Each subsequent subtask built upon the knowledge gained from the previous ones.

The subtasks began with basic project organization and stakeholder group creation. It moved through analyzing the available market potential of DR, estimated the DR market value, considered product structures and operational implementation challenges.

The subtasks were as follows:

SUBTASK	DESCRIPTION
<i><u>SUBTASK 1</u> -- Finalize Global and Country-Specific Objectives</i>	This step involved finalizing and agreeing to the Task work plan. It also focused on the creation of in-country stakeholder groups and in-country work plans.
<i><u>SUBTASK 2</u> -- Define the DR Resource Base and Market Characterization</i>	This subtask involved creating a market characterization of demand response products, services and enabling technologies.
<i><u>SUBTASK 3</u> – Market Potential of DRR</i>	This subtask focused on developing ways to estimate market potential for demand response. This included benchmarking, surveys, and statistical analysis.
<i><u>SUBTASK 4</u> – Demand Response Valuation</i>	This subtask developed methods and procedures to establish a regional market value for DR. A framework was created that can be applied in each country.
<i><u>SUBTASK 5</u> – Enabling Technologies</i>	The focus of this subtask was to develop a catalogue that describes the technologies and systems that are available for use in DR programs both from the perspective of the system operator and the participating customer.
<i><u>SUBTASK 6</u> – DR Business Issues</i>	This subtask collected information on DR product design, DR market barriers, and DR business models in the participating countries.
<i><u>SUBTASK 7</u> – Develop DRR Network of Methods, Tools and Applications</i>	This subtask involved creating a web portal that is a virtual center of excellence concerning regarding DRR methods, technologies, and applications.
<i><u>SUBTASK 8</u> – Deliver Products and IP to IEA DSM Programme and Project Participants</i>	This subtask focused on the delivery of the intellectual property created in the DRR Project to the IEA DSM Programme and the participating countries.

LIST OF TASK XIII REPORTS, TOOLS AND INTELLECTUAL PROPERTY

The following items have been generated from the efforts of all Task XIII participants:

- *Task XIII Project Guidebook*
- Task XIII Project Portal
- Market Characterization Guide
- Country Marketplace Overview Surveys
- Country Comparison – Final Report
- DR Reference Library
- Communication Toolkit
- Final DR Market Potential Report and Appendices
- Online DR Market Potential Calculator
- DR Valuation Market Analysis Volume 1
- DR Valuation Market Analysis Volume 2
- DR Technology Database
- DR Product Database

SUBTASK 1: Finalize Global and Country-Specific Objectives

This subtask focused on establishing the major project management tools and strategies.

The major accomplishments were:

- Overall work plan and budget were finalized.
- The position paper was written and circulated within the participating community.
- The project portal was established and it has been continuously updated with content since that time.
- The data collection templates was prepared and circulated to the participating countries.
- The first Experts Workshop for Task XIII was held in Valencia, Spain on May 10th and 11th, 2004 with all participating countries invited to attend.

In addition to this, the first two chapters of the *Task XIII Project Guidebook (Guidebook)* were drafted. The chapters provide general background information on demand response as well as advice for establishing in-country stakeholder groups.

All Country Experts were encouraged to create their own in-country stakeholder group. The intent behind this was to (a) seek support for completing some of the future project work from those in the energy / demand response space; and. (b) develop working relationships with in-country colleagues in order to help develop and promote a DR implementation strategy at the end of the project.

Most of the Country Experts were successful in creating an in-country stakeholder group. However, it did take some Country Experts much longer than originally expected. One such group did not really reach active formation until the end of 2005. This may explain some of the data gathering delays that occurred during the middle of the Task work plan.

But, on a positive note, those that were able to establish their stakeholder groups at this time were able to use that team to develop an in-country work plan. The Australian and USA stakeholder groups graciously shared their work plans with all participants. Their plans are included in the *Guidebook* as examples.

SUBTASK 2: Define the DR Resource Base and Market Characterization

If structured correctly, demand response (DR) can provide energy and capacity to the power market at the time and place it is needed most. Doing so can help mitigate supply side market power and violent price spikes. But, there are a number of ways that demand response can be designed. Some markets have chosen to build DR into its energy and/or capacity reserve products, while other markets press for DR participating based on

pricing schemes such as real time pricing or a hybrid offering like Sweden’s proposed “Fixed Price with Right to Return” (*Guidebook* Chapter 7 discusses product types in more detail). Subtask 2 focused on understanding the market environment in which the resource will be engaged.

The first step in building a solid DR base is to understand who the market actors are and how they relate with each other. The local market structure dictates how the market actors work together. For example, some markets have a publicly visible power exchange and some markets do not. When a power exchange exists, the wholesale price of power and energy is transparent – assuming a fair and efficient market design. But, if a power exchange does not exist, the fair market value of power and energy may not be as transparent. DR will work in either of these market types, but they would likely be structured differently.

Chapter 3 of the *Guidebook* discusses things to look for when evaluating the market environment. This includes the market actors (i.e. energy suppliers, distribution companies, TSO, power exchange, DR aggregators, regulators, etc), whether the market is liberalized or not, and general market design.

Given that DR is provided by consumer actions, it is important to know what types of consumers are in the market. This information was used in Subtask 3 to help estimate the available DR market potential. The supply and demand outlook was used in Subtask 4 to estimate the value of the DR resource.

Each Task XIII Country Expert engaged in the Task had a solid understanding of their market situation, but they were not very familiar with the other participants markets. In order to establish a baseline understanding, each Country Expert was asked to complete a “Marketplace Overview Survey”. The survey is included at the end of Chapter 3 in *Guidebook*. The survey provided a structured method for gathering information about the market environment as it relates to DR. In addition, since Task XIII was structured such that subsequent Subtasks build upon the knowledge from the previous ones, the information gathered here was also used at a later point in the Task.

The Operating Agent used the information gathered from the completed “Marketplace Overview Survey” and related Country Expert presentations to generate the “Country Comparison Report”. This report provides background information on the market environment of each project participant. The report also provides some insight into the current DR activities in each country.

SUBTASK 3: Market Potential of DR

After understanding the market environment, it is helpful to understand the available market potential for DR in that market. Given that DR is ultimately provided by the consumer, the market potential in any given market will be tied to the customer mix in that market.

The Operating Agent Team sought to locate prior research that provided estimated DR capabilities by discrete consumer groups (e.g. industry codes). If such research was available, it would provide the raw data that could be incorporated into a model that would estimate the potential in a local market. Unfortunately, the OA Team was not able to locate a public source for this. However, a project known as EU-DEEP (see www.eu-deep.com) was identified. This is a proprietary study funded by a consortium of 39 European firms. Given that EU-DEEP is a proprietary study that was in its early development when first located, and given that it was well beyond the scope and budget to replicate it in the Task, it was necessary to approach the market potential question from different perspective.

The OA Team reviewed the methods used to estimate traditional DSM market potential. Unfortunately, these methods did not really capture DR. They are very good in estimating the amount of permanent kWh reductions, but they did not seem to capture temporary KW reductions – as is the case with DR.

As a result, it was concluded that benchmark analysis would yield the “next best proxy”. The OA Team developed a “Demand Response Market Potential Survey”. The survey focused on interviews with DR product managers at energy suppliers, distribution companies and aggregators. The survey was designed to elicit how much DR exists relative to a given consumer mix. The top performers would be used as the market potential benchmark.

The OA Team interviewed more than 40 North American firms. The survey was provided to all Country Experts and they were asked to solicit responses from their market participants. Unfortunately, responses from the Country Experts were not received. It is unclear if the data request was not deliberate enough or if the request was too complex. Nonetheless, the OA team was successful in establishing DR reasonable benchmarks. But, it quickly became apparent that the benchmark may not be directly applicable to other markets given that they may have a different consumer mix. This prompted the creation of the “DR Market Potential Calculator”.

The “DR Market Potential Calculator” (DR Calculator) is located on the Task XIII project portal. The DR Calculator helps translate the market potential benchmark generated from the survey to another market by utilizing market demographic data (e.g. information gathered during Subtask 2). While the DR Calculator is extremely simple to use, it does seem to provide a reasonable first level DR market potential estimate. In fact, some Country Experts indicated that the result is similar to what they estimated from

detailed research studies that took several months and a sizable financial commitment to complete. Task XIII does not claim that that DR Calculator is an exact tool, but it does provide guidance on whether further investigation of a market is warranted – and it does so with just a few hours of work.

Several Country Experts used the DR Calculator to estimate the potential in their markets. Estimates from Canada, Denmark, Italy, Korea, Norway, and Spain are available in the DR Potential Toolkit section of the Task XIII project portal.

Sometimes a first level potential estimate does not provide enough insight or specificity. More detailed estimates can be generated by investigating a statistical sample of the consumer base. To assist with this effort, Task XIII created a sample survey and recommendations for its implementation. This tool is more labor intensive and costly, in terms of both time and financial expense, but it should yield a more precise estimate of the local DR market potential. This method has the added benefit of providing a deeper understanding of the types of things the consumer base would do to provide the physical DR. This information can be used at a later date for target marketing and/or product design. Sample market design studies are included on the project portal as well.

The market potential tools created by Task XIII are described in more detail in Chapter 4 of the *Guidebook*.

SUBTASK 4: Demand Response Valuation

Demand Response Valuation was the most complex issue confronting the Task XIII participants. Our goal was to identify or develop a methodology that provides an indicative estimate of DR value in a given market. More to the point, Task XIII sought a way to estimate the value such that it can be used in making regulatory and/or business decisions. This meant that the estimate needed to consider future market dynamics.

Known previous DR valuation efforts estimated the value DR provided during some defined past event. Evaluating whether the DR resource provided a value greater than its operational cost is both reasonable and prudent. But this method may not be helpful in predicting the future value of DR for a given market.

Much of the time in the first several Country Expert Meetings was dedicated to discussing the DR valuation question. In addition, the Danish Country Experts also hosted a special workshop on this topic. After much debate, there was general agreement that a marketing modeling technique would ultimately yield a “net present value” estimate of DR provided that DR is incorporated as one of the possible market resources. This methodology was preferred because it uses probabilistic modeling to predict the interplay with multiple market inputs (e.g. supply/demand growth, fuel costs, transmission tie lines, etc).

In addition, the probabilistic modeling technique also allows the modeler to test a variety of “what if” scenarios. Questions such as:

- What is the optimum amount of DR for the market?
- What types of DR products should be used in the market?
- What is the optimal amount of DR for each product?
- Which market variables have the greatest impact on DR value?
- How frequently would DR be needed?

It was outside the Task budget to perform the valuation analysis for all Task participants. It also did not seem fair to choose a single participant. Therefore, with the assistance of all Country Experts, Task XIII created a “sample market” and sample DR products for that market. Table 1 illustrates the NPV for three different DR product portfolios from that sample market.

Table 1: Sample Market Savings by DR Product Portfolio

System costs savings (\$M)	
	Average NPV over 20 years
Callable DRR Only	48
Callable DRR with Critical Peak Pricing (peak hour load reduction only)	574
Callable DRR with Standard RTP – (reduction in demand in all high price hours)	1,984

There are two reports focused on this topic. The first report, “DRR Market Analysis Volume I,” is targeted to energy industry professionals. This is intended to be a layman introduction to the process. Volume I is integrated into Chapter 5 of the *Guidebook*.

The second report, “DRR Market Analysis Volume II,” is a more detailed report targeted at energy industry professionals with market modeling expertise. It provides greater insights into how to incorporate DR into commercially available modeling systems.

Both reports discuss the thought process behind the methodology as well as other strategies that were considered. The reports also consider ways to estimate DR value for each class of market actors. Finally, the reports use the sample market information to provide an illustration on implementing the methodology.

In addition, the OA Team worked with Australian Experts to create a sample “tender” (or request for proposal) that can be used to select a qualified vendor to perform the valuation analysis. The Australian Team used this document to select a vendor. They performed the analysis for their market and it demonstrated a sizable benefit. The Australian DR valuation analysis report is available on the project portal for review.

In addition to the sample market and the Australian estimate, DR valuation studies were performed by Denmark and Norway. These studies are posted on the project portal for reference purposes.

SUBTASK 5: Enabling Technologies

Demand Response has been made practical by advances in communication and information technologies. Knowing when, where and how much to load shed can be a very powerful tool. Correlating how much energy can be shed with the market cost for that energy each hour allows the consumer to manage its costs and, depending on the DR product, earn revenue for doing so. This subtask focused on reviewing how DR technology is being used in the participating markets.

To complete this subtask, the project members focused on creating a DR Technology Database. The OA provided a case study template to the Country Experts. This template provided a standardized way to collect the information. The database houses technology case studies provided by the Country Experts. A total of fifty technology case studies were received from Australia (AU), Canada (CN), Denmark (DK), Finland (FI), Italy (IT), Korea (KO), Netherlands (NL), Norway (NO), Spain (SP) and the United States of America (US). In addition to the case studies, Norway and the United States provided a list of AMR and DR technology service providers.

The types of technology case studies vary from new meters and AMR equipment, to advanced load control equipments and new systems which aggregate and manage distributed generation resources. The technology applications cover all customer class types (i.e. residential, commercial and industrial). In certain of the cases, the technology applications are currently being studied/tested in pilot programs -- if so, the key pilot program parameters are noted (if they were provided).

Armed with the technology case studies, the OA created Chapter 6 of the *Guidebook*. This chapter addresses the following information related to DR technologies:

Section II: Purpose of DR Technology

This section introduces what DR technology means and how they are being used.

Section III: DR Technology Functionality

This section discusses some basic elements of DR technologies.

Section IV: DR Technology Case Studies

This section categorizes and summarizes the technology case studies provided by the Country Experts. The actual case studies are located in the technology database section of the project portal.

Section V: Identify Where to Use DR Technologies

This section offers suggestions for identifying where DR technologies can be used at consumer sites.

Task XIII is not in a position to declare one technology better than the other. But, it is possible to highlight a few technologies that are unique. A few general trends are:

- There are technologies that make it easier for the consumer to understand their consumption patterns and energy costs. These include:
 - AU-1: Cent-A-Meter
 - CN-2: Blueline PowerCost Monitor

- There are also technologies that help the DR Aggregator and/or System Operator better manage the DR product. These systems operate like a control room energy management system for DR. These include:
 - DK-1: EFFLOCOM
 - FI-1: ENERMET
 - US12: RETX Energy Service ; eLutions

- Immediately after DR market actors are able to get the information they need (i.e. connect consumer loads to proper price signals), they start to look for ways to activate the DR more efficiently. There are a number of solutions related to building automation and direct load control systems that may be helpful in this endeavor, including:
 - AU-12: Bryln
 - NL-1: Assimilation Lighting and Heating in the Horticultural Sector
 - US-2: Doubtree Hotel, Sacramento CA remote facility monitoring and control

The technology database is located on the Task XIII project portal.

SUBTASK 6: DR Business Issues

There are a few other key issues that impact how, when and where to integrate DR into the market. Chapter 7 of the *Guidebook* takes a look at a few of these business driving issues:

DR Business Models: This section discusses opportunities and challenges facing the various market actors involved in demand response industry. It is important to understand that there is a difference between a business model and a market model.

Business Model: A business model describes the strategy that a given market actor uses to market, sell, and deliver its services.

Market Model: A market model discusses how all the market actors interrelate with each other.

Market models are established by regulator design or organic growth. Business models are created based on the opportunity presented to a given market actor. This section focuses on the former. It discusses what might drive a category of market actors to engage in DR activities as well as the challenges they face in doing so.

DR Products: This section discusses a variety of DR product designs and highlights a few products in use today. The DR products were organized into a searchable database located on the project portal.

For the purpose of organization, the products provided were organized into three primary categories:

1. Reliability / Emergency Structures
2. Economic / Demand Bidding Structures
3. Real Time / Pricing Structures

The Reliability / Emergency Section is focused on products where someone has a “call option” on a resource. In these products, the resource tends to receive some sort of reservation payment for the ability to respond to a load reduction request from another party. Consumers that receive these payments typically have a “best efforts to run” obligation.

The Economic/Demand Bidding Section is focused on products where a consumer (or its agent) bids in a price at which they are willing to sell their reduction. These products are generally voluntary from the perspective that the consumer either decides to bid or not bid. The consumer is also generally paid in some relation to the hourly energy market for their reductions.

The Real Time Pricing / TOU Section is focused on commodity pricing that has incentives for consumers to use power based on market conditions. These consumers typically are not paid for their actions, but they do avoid paying the market rate for the power they do not consume during that period.

Table 2 illustrates the number of DR products by country and product type that is contained in the DR Product Database (located on the Task XIII project portal).

Table 2: NUMBER OF PRODUCTS PER COUNTRY PER CATEGORY

Country	Reliability / Emergency Section	Economic/Demand Bidding Section	Real Time Pricing / TOU Section
Australia	14	5	1
Canada	1		
Denmark	2		1
Finland	1	1	2
Italy	2		
Norway	3		
Spain	3	1	1
Sweden	7	1	1
USA	18	37	9

DR Market Barriers: This section identifies many key, and common, market barriers that are hindering the growth and adoption of DR.

The project participants discussed a number of issues impacting the development of DR in their local markets. Some of these issues were unique to a market, but there are a few issues that were identified by almost all participants.

Table 3 provides a list of several common challenges that seem to exist in all participating countries. The table also offers suggested actions that local market actors (e.g. regulators, energy suppliers, DR aggregators, distributors, TSOs, etc) could use to mitigate the challenges.

Table 3: Common Market Challenges for Demand Response

	Common Challenges	Suggested Actions
1	<p>Consumer Awareness</p> <ul style="list-style-type: none"> - Don't know what DR is - Unaware of their demand flexibility - Unaware how they benefit from DR 	<ul style="list-style-type: none"> - Develop case studies showing how others have participated and benefited. - Initiate awareness campaign (radio, billboard, news reports, seminars)
2	<p>Price Signals</p> <ul style="list-style-type: none"> - Consumers accustomed to fixed cost per kWh - Wholesale to retail disconnect - Limited use of locational pricing 	<ul style="list-style-type: none"> - Utilize DR products and tariff pricing that link consumer behavior with energy cost - Initiate trials to test local market adoption
3	<p>Meter Data</p> <ul style="list-style-type: none"> - Most meters in use today do not record hourly intervals - Limited use of data exchange standards - Limited incentives to make new investments 	<ul style="list-style-type: none"> - Load profiling methods can be used in some circumstances - Allow meter owners ability to recover costs for upgrades - If AMR is used, make sure the functionality works with desired DR products prior to installation
4	<p>Market Operations</p> <ul style="list-style-type: none"> - DR may be precluded from participating in wholesale market - DR must conform with supply side market rules (e.g. large trading blocks) 	<ul style="list-style-type: none"> - Use trials to demonstrate DR ability to serve the wholesale market

SUBTASK 7: Develop DRR Network of Methods, Tools and Applications

This subtask focused primarily on project management and communication outreach of the Task.

The first thing the OA did for this subtask was to create the project portal. The portal houses all project related information and research data including Expert Meeting presentations. The portal also houses all tools created by the Task (e.g. research library, Potential Calculator, and the Product and Technology databases).

As part of the Task Communication Plan, the OA gave presentations about the project at a dozen different industry conferences and several newsletters were issued during the course of the project.

The OA recognized that communication outreach needs to extend into each of the participating countries as well. As a result, the OA created the Communication Toolkit.

This tool provides a road map for the Country Experts to use to share Task information with their stakeholders. The Communication Toolkit can be found on the Task project portal.

SUBTASK 8: Deliver Products and IP to IEA DSM Programme and Project Participants

There are three basic elements to this subtask:

1. In-country DR implementation strategy

From the beginning of the Task, the OA indicated that more was required than simply creating tools and reports. It was hoped that the task work would actually cause the participants to work with their stakeholders in developing a DR implementation strategy. While not all participants took up this challenge, those that did took it very seriously.

For example, the Australian Team used each of the steps involved in Task XIII to develop a Demand Response Roadmap for Australia. Their roadmap assesses the market environment, estimates the market potential, calculates the value of DR and describes some of the challenges they need to overcome. The Australian DR road map is available on the Task XIII project portal for review.

2. Regional workshops

Thus far, two regional workshops have been held. The Danes hosted a European seminar outside Copenhagen on November 13-14, 2006 and the Australian's hosted a seminar in Melbourne on November 16, 2006.

These workshops focused on sharing the information the participants gleaned from the Task to their stakeholders. There was a specific intent to describe the tools developed during the project and how the people can use them. The presentations from both seminars are located on the project portal.

It should also be noted, that there were regional workshops held in conjunction with almost every Expert Meeting during the duration of the project. These meetings were used to brief stakeholders on the Task progress as well as current DR events from other countries.

3. Physical delivery

At the October 2006 ExCo meeting a request was made of the OA to provide copies of the Guidebook and related reports to each member via CD ROM. The CD ROMs will be shipped in January 2007.

PROJECT MANAGEMENT

Task XIII successfully completed all of its requirements. The results can form the basis for evaluating potential DR strategies. The *Task XIII Project Guidebook* can be used as a structured framework for creating a formal DR business strategy or regulatory analysis. It can also be used as a continuing education tool to inform energy industry professionals about how demand response works and what its benefits may be. But completing the task work was not without some challenges.

All of the Country Experts that attended the Experts meetings actively participated in those discussions. Their insights and guidance was invaluable. The OA is extremely grateful to the Country Experts that hosted the Expert Meetings. The logistics for planning such events were sometimes daunting.

But it should be stated that there were noticeable differences in participation levels when it came to data/homework requests. The OA firmly believes that all participants had good intentions, but it seems that some Country Experts were challenged in completing some requests in a timely fashion due to demands from their “real jobs”. The inequality in effort did cause some serious concerns for the participants that did put forth a serious effort. It also caused some delays in the ultimate project schedule. The OA raised this issue with the ExCo in at least four Task Status Reports.

The OA would be remiss if another of the key project management challenges was not mentioned. During the course of the project it became clear that some ExCo Members and their Country Experts were not in regular communication with each other. In fact, this issue was raised as a serious concern by several Country Experts on a few occasions.

In order to mitigate these two primary challenges in any future project, the Task XIII OA recommends that the OA host a quarterly teleconference with each country’s Expert and ExCo member. The teleconference should be structured such that they occur about three months before each ExCo meeting. This would provide ample time to correct any errors, omissions, or misunderstandings before a new Task Status Report is submitted to the ExCo. As an added benefit, this will help to facilitate regular communication between the ExCo member and his/her Country Expert.

POTENTIAL TASK EXTENSION IDEAS

Task XIII encompassed a very broad scope of demand response issues. As the Task participants worked through those issues a number of additional ideas were conceived that would address specific issues in much greater detail.

The following ideas have been submitted to the IEA DSM ExCo for consideration:

1. Investigating the correlation of advanced metering infrastructure and demand response

This proposed Task will investigate the relationship between AMI and DR by considering things such as existing AMI systems, DR product types, and data management/exchange protocols.

2. Correlating Energy Efficiency Standards and Demand Response

This proposal would be for a Task to examine the feasibility of including load control technologies as a part of energy efficiency standards. Using energy efficiency standards to e.g., require new central air conditioning units to have switches that would allow a supplier to switch it off in peak hours will, over time, increase the security of electricity supply, and could reduce costs to consumer.

3. Metrics for evaluating demand response programs

This proposed Task will investigate what the definition of 'success' should be in relation to demand response. In many instances, clients (that is, players that participate in some demand response program) judge success in terms of the return they receive for the change in their electricity consumption behavior (payment, etc.) versus the costs incurred (installation of new technology, management time, etc.) of doing so.

4. Determine the Motivations of Demand Response Market Leaders

The primary goal of this new subtask is to get an international overview of DR market leaders and why they perform better than others. Demand response market leaders throughout the world will be searched for and identified through the current IEA DSM Task XIII country experts and other sources.