## Assessment of the IEA DSM material and its relevance and applicability for different purposes.

Task	Publications	Relevance
I Subtask 8 - International Database on Demand-Side Management Technologies and Programmes	INDEEP Analysis Report 2004 http://www.ieadsm.org/Files/Tasks/Task%201%20Subtask%208%20- %20International%20Database%20on%20Demand- Side%20Management%20Technologies%20and%20Programmes/Archive/indee p%20analysis%202004.pdf	<ul> <li>The INDEEP database started in 1994 as an international tool for: <ul> <li>inspiring the design and planning of new DSM and energy efficiency activities;</li> <li>comparing the user's own programmes with similar types of programmes and evaluations;</li> <li>providing access to contacts concerning different types of DSM, thus creating a network.</li> </ul> </li> <li>By July 20041 the database contained 229 quality-controlled programmes from 14 countries. The material might still have some interest as inspiration for programmes.</li> </ul>
I Subtask 9 - Evaluation Guidebook on the impact of DSM and Energy Efficiency Programmes for Kyoto's GHG Targets	Evaluation guidebook (2005) Volume 1.  http://www.ieadsm.org/Files/Tasks/Tasks/201%20Subtask%209%20- %20Evaluation%20Guidebook%20on%20the%20impact%20of%20DSM%20and %20Energy%20Efficiency%20Programmes%20for%20Kyoto's%20GHG%20Targe ts/Reports/Volume1Total.pdf  Volume 2  http://www.ieadsm.org/Files/Exco%20File%20Library/Key%20Publications/Volume%202%20total.pdf	Volume (I) deals with evaluation theory and recommends how evaluations for five types of policy measures and programmes should be conducted. This new approach involves organising evaluations into seven key analytic elements.  Volume II covers the evaluation tradition in the various countries and a number of selected case examples on evaluations, and also provides readers with additional background information concerning the choices made, which could help them find solutions for missing elements in the theory.
II - Communications Technologies for Demand-Side Management	http://www.ieadsm.org/ViewTask.aspx?ID=17&Task=2&Sort=1	Very dependent on available technologies at the time of the work. Mostly irrelevant for new distribution systems today with smart grid technology at hand but might have some interest for refurbishment of older existing grids.

III - Co-operative Procurement of Innovative Technologies for Demand-Side Management	Co-operative Procurement of Innovative Technologies for Demand-Side Management (2000) http://www.ieadsm.org/Files/Tasks/Task%20III%20-%20Co-operative%20Procurement%20of%20Innovative%20Technologies%20for%20Demand-Side%20Management/General%20Information/FRpt.pdf  Appendix to the above http://www.ieadsm.org/Files/Tasks/Task%20III%20-%20Co-operative%20Procurement%20of%20Innovative%20Technologies%20for%20Demand-Side%20Management/General%20Information/AppFRpt.pdf	A procedure for collaborative procurement actions for introduction of innovative, more energy-efficient products has been developed and tested in a number of pilot projects. A clothes drier with the energy use cut by half (the first "Class A" drier), electric motors with losses reduced by 20- 40% and a "copier of the future" where the energy use has been reduced down to 25%!  The model can easily be transferred to any party/actor who has an interest in boosting the market to deliver products with higher performance,
IV - Development of Improved Methods for Integrating Demand-Side Options into Resource Planning	Guidebook on Analytical Methods and Processes for Integrated Planning (1996) http://www.ieadsm.org/Files/Tasks/Task%20IV%20- %20Development%20of%20Improved%20Methods%20for%20Integrating%20Demand- Side%20Options%20into%20Resource%20Planning/Reports/Iv3 main.pdf	Planning and its elements (methods and tools) remain relatively stable over time. This publication deals not only with planning techniques but also the mirrors the market situation and makes a difference between Public-Policy based and Business based integrated planning  There are large differences and variations between utility market situations regarding the role and function filled by the integrated planning effort, i.e., why and who carries out the integrated planning effort. Similarity in technical elements across utility-market situations — Many of the technical elements of integrated planning can be found across most utility-market situations.
	(Preliminary) Concepts For New Mechanisms for Promoting DSM and Energy Efficiency in New Electricity Business Environments. (1997)  http://www.ieadsm.org/Files/Tasks/Task%20IV%20- %20Development%20of%20Improved%20Methods%20for%20Integrating%20Demand- Side%20Options%20into%20Resource%20Planning/Reports/Iv7 main.pdf	The restructuring of utility business and breaking up of vertical business structures changes the conditions for the actors but not the need for DSM.  The mechanisms identified in this report are not DSM and energy efficiency programs. Rather they assist the implementation of such programs. Two types of mechanisms are investigated. First there are policy and regulatory measures which can be implemented by governments and regulators to promote DSM and energy efficiency. Second there are mechanisms which enable energy businesses to make a commercial return by implementing DSM and energy efficiency programs.

V - Investigation of Techniques for Implementation of Demand-Side Management Technology in the Market Place REPORT 6 Techniques for Implementation of Demand Side Management Technology in the Marketplace (1998) http://www.jeadsm.org/Files/Tasks/Task%20V%20-

%20Investigation%20of%20Techniques%20for%20Implementation%20of%20Demand-

<u>Side%20Management%20Technology%20in%20the%20Market%20Place/Reports/Report6\_annex5\_english.pdf</u>

There are also 5 reports available covering different aspects and all material is available also in Spanish

Local utilities in some participating countries carried out, compared and evaluated some "micromarketing" activities which indicated that:

- DSM actions should be carried out even in liberalised markets.
- From a Utility's point of view, in a liberalised market DSM should be a part of the marketing activities to reach a more competitive position.
- Customers attitudes facing energy use are similar in all countries.
- Marketing stimulus is useful probably due to the fact that the benefits from an efficient use of the electricity are not, for the moment, so obvious to the customers.
- The Public Sector is always somehow connected with DSM programmes.
- The DSM campaigns produce a cumulative long term effect on customers that implies a lower effort for future actions.

VI - Mechanisms for Promoting DSM and Energy Efficiency in Changing Electricity Businesses A summary and overview of the work was published in the journal *Energy Policy* under the title." Public policy analysis of energy efficiency and load management in changing electricity businesses" (2003). <a href="http://www.ieadsm.org/Files/Tasks/Tasks/20VI%20-">http://www.ieadsm.org/Files/Tasks/T

%20Mechanisms%20for%20Promoting%20DSM%20and%20Energy%20Efficiency%20in%20Changing%20Electricity%20Businesses/Journal%20Articles/Public%20Policy%20Analysis%20of%20Energy%20Energy%20Energy%20Businesses/Journal%20Articles/Public%20Policy%20Analysis%20of%20Energy%20Energy%20Businesses/Journal%20Articles/Public%20Policy%20Analysis%20of%20Energy%20Energy%20Businesses/Journal%20Articles/Public%20Policy%20Analysis%20of%20Energy%20Energy%20Energy%20Businesses/Journal%20Articles/Public%20Policy%20Analysis%20of%20Energy%20Energy%20Energy%20Businesses/Journal%20Articles/Public%20Policy%20Analysis%20of%20Energy%

Research Report No 1: Existing Mechanisms for Promoting DSM and Energy Efficiency in Selected Countries (1998). http://www.jeadsm.org/Files/Tasks/Tasks/20VI/820-

%20Mechanisms%20for%20Promoting%20DSM%20and%20Energy%20Efficiency %20in%20Changing%20Electricity%20Businesses/Publications/resrpt1 fin.PDF

Research Report No 2: Public Policy Implications of Mechanisms for Promoting Energy Efficiency and Load Management in Changing Electricity Businesses (1999). <a href="http://www.ieadsm.org/Files/Tasks/Task%20VI%20-">http://www.ieadsm.org/Files/Tasks/Task%20VI%20-</a>

%20Mechanisms%20for%20Promoting%20DSM%20and%20Energy%20Efficiency %20in%20Changing%20Electricity%20Businesses/Publications/resrpt2 fin.PDE

Research Report No 3: Developing Mechanisms for Promoting Demand-Side Management and Energy Efficiency in Changing Electricity Businesses (2000). http://www.ieadsm.org/Files/Tasks/Tasks/20VI%20-

%20Mechanisms%20for%20Promoting%20DSM%20and%20Energy%20Efficiency %20in%20Changing%20Electricity%20Businesses/Publications/resrpt3\_fin.PDF The work in Task VI comprised the identification and characterisation of existing mechanisms for promoting DSM and energy efficiency. Experts provided details of these mechanisms which were recorded in a database. Eventually, details of over 100 existing mechanisms were recorded in the database. To these were added 25 new mechanisms.

The effectiveness of these mechanisms was assessed against a range of criteria. Four types of mechanisms were developed:

- **Control Mechanisms** these are used to direct energy businesses to change behavior.
- Funding Mechanisms these provide funding for other mechanisms.
- **Support Mechanisms** these provide support for behavioural changes by endusers and energy businesses.
- Market Mechanisms these enable the use of market forces to encourage behavioural changes by end-users and electricity businesses.

The material is available in Spanish.

VII - International Collaboration on Market Transformation	Market Research Industry Consultation (2004). http://www.ieadsm.org/Files/Tasks/Task%20VII%20- %20International%20Collaboration%20on%20Market%20Transformation/Archive /Branding%20Energy%20Efficiency%20-%20IEA- DSM%20MT7%20Industry%20Consultation.pdf  Branding Energy Efficiency (2003). http://www.ieadsm.org/Files/Tasks/Task%20VII%20- %20International%20Collaboration%20on%20Market%20Transformation/Archive /Branding%20Energy%20Efficiency%20-%20IEA- DSM%20MT7%20Market%20Report.pdf	A central goal of the work has been to find a better way to market energy efficiency. The study explores attitudes and behaviour in the field of energy efficiency, which are closely related to typologies and value patterns.  Understanding the characteristics of these typologies and value patterns will be crucial for those wishing to market their energy efficient products and services effectively.
VIII - Demand-Side Bidding in a Competitive Electricity Market	Brochure with introduction to the concept. http://www.ieadsm.org/Files/Exco%20File%20Library/Key%20Publications/brochure.pdf  Market participants' views towards, and experiences With, Demand Side Bidding (2002). http://www.ieadsm.org/Files/Exco%20File%20Library/Key%20Publications/Stage 1ReportV2.pdf  A Practical Guide to Demand-Side Bidding. http://www.ieadsm.org/Files/Exco%20File%20Library/Key%20Publications/Practi	Demand Side Bidding (DSB) is a mechanism that enables consumers to actively participate in electricity trading, by offering to undertake changes to their normal pattern of consumption. Measures aimed at producing long-term changes in demand, e.g. traditional Demand Side Management programmes that result in permanent demand reduction, are outside the scope.  DSB may be applied for balancing of the system and/or for frequency response.
IX - The Role of Municipalities in a Liberalised System	calGuideToDSB.pdf  29 Case studies (from Europe and Northern America ) of Good Practice in Rising to the Challenge of Liberalisation. (2002)  http://www.ieadsm.org/Files/Exco%20File%20Library/Key%20Publications/MEELSCaseStudies.pdf  General Background to the Energy Sector in the Participant countries and how it has been affected by Liberalisation (2002).  http://www.ieadsm.org/Files/Exco%20File%20Library/Key%20Publications/GrazReport1Final.pdf  The Roles of Municipalities in the Energy Sector. (2002)  http://www.ieadsm.org/Files/Exco%20File%20Library/Key%20Publications/GrazReport2Final.pdf  A number of more detailed but also popular articles in newsletters are available on	This project is investigated how the roles of local authorities in demand side management are affected by a liberalised market. Demand side management includes action to improve energy efficiency, load management and action to reduce CO 2 emissions by energy substitution.  Local authority activities in this field were assessed for replicability, choice of targets, its effectiveness in producing long term results, response to social and political needs, response to conditions of the liberalised market and the likelihood of resources and financing being found on a long term basis.

X – Performance Contracting	The original documents are available on <a href="http://www.ieadsm.org/ViewTask.aspx?ID=17&amp;Task=10&amp;Sort=1">http://www.ieadsm.org/ViewTask.aspx?ID=17&amp;Task=10&amp;Sort=1</a>	This task was reported 2003 and 2004 but has been superseded by task XVI. The final report is still a good primer to the concept of ESCOs and how it has developed.  http://www.ieadsm.org/Files/Exco%20File%20Library/Key%20Publications/TX_SummaryReport_May03.pdf
XI - Time of Use Pricing and Energy Use for Demand Management Delivery	The original documents are available on <a href="http://www.ieadsm.org/ViewTask.aspx?ID=17&amp;Task=11&amp;Sort=0#ancPublications">http://www.ieadsm.org/ViewTask.aspx?ID=17&amp;Task=11&amp;Sort=0#ancPublications</a> <a href="https://www.ieadsm.org/ViewTask.aspx?ID=17&amp;Task=11&amp;Sort=0#ancPublications">https://www.ieadsm.org/ViewTask.aspx?ID=17&amp;Task=11&amp;Sort=0#ancPublications</a> <a href="https://www.ieadsm.org/ViewTask.aspx?ID=17&amp;Task=11&amp;Sort=0#ancPublications">https://www.ieadsm.org/ViewTask.aspx?ID=17&amp;Task=11&amp;Sort=0#ancPublications</a> <a href="https://www.ieadsm.org/ViewTask.aspx?ID=17&amp;Task=11&amp;Sort=0#ancPublications">https://www.ieadsm.org/ViewTask.aspx?ID=17&amp;Task=11&amp;Sort=0#ancPublications</a> <a href="https://www.ieadsm.org/ViewTask.aspx">https://www.ieadsm.org/ViewTask.aspx</a> ?ID=17&Task=11&Sort=0#ancPublications	This task was reported 2007 but has been superseded by and covered in Task XIII.  The final report still has some interest in terms of concept descriptions. <a href="http://www.ieadsm.org/Files/Tasks/Tasks/20XI/820">http://www.ieadsm.org/Files/Tasks/Tasks/Tasks/20XI/820</a> %20Time%20of%20Use%20Pricing%20and%20Energy%20Use%20for%20Demand%20Management%20Delivery  /Reports/Task%20XI/820Final%20Report%206%20Nov%2007.pdf
XII - Cooperation on Energy Standards	This task was prepared but not launched. The work is now considered by the 4E Programme.	-
XIII - Demand Response Resources	Demand Response Resources - Guidebook (2006) Section 1 - Background Information Section 2 - Getting Started Section 3 - DR Resource Base Section 4 - Market Potential Section 5 - DR Valuation Section 6 - Technologies Section 7 - Market Barriers and Solutions Section 8 - Drafting the Business Plan DRR Guidebook - Appendices  Communication Toolkit (2006) Toolkit (pdf)	DRR provide the long-term risk management insurance that is needed if competitive electricity markets are to work. The ability to call upon thousands of megawatts contractually, on short notice and in specific locations provides a virtual storage asset that can be used for short duration demand peaks, facilitate power restoration, and provide a means of transition to, or possibly prevent, new power system upgrades.  Recognizing the urgent need for demand side participation in electricity markets to ensure energy security and mitigate price volatility in liberalized electricity markets.
XIV - Market Mechanisms for White Certificates Trading	Guide, Template and Forms (pdf)  Market Mechanisms For White Certificates Trading - Task XIV Final Report.  http://www.ieadsm.org/Files/Exco%20File%20Library/Key%20Publications/TaskX IVFinalReport.pdf	White Certificates are certificates issued by a regulatory or other public Agency, against the fulfilment of obligations on energy savings targets. These targets are expressed in terms of an amount of energy that should be saved as a result of energy efficiency programs, promoting and facilitating the provision of energy services and energy efficiency measures to all end-use sectors (including the domestic and commercial sectors, the public sector, and small and medium-sized enterprises).

XV - Network Driven DSM (2008)	Report No 1: Worldwide Survey of Network-driven Demand-side Management Projects. Second edition  Report No 2: Assessment and Development of Network-driven Demand-side Management Measures. Second edition  Report No 3: Incorporation of DSM Measures into Network Planning. Second edition  Report No 4: Evaluation and Acquisition of Network-driven DSM Resources. Second edition  Report No 5: The Role of Advanced Metering and Load Control in Supporting Electricity Networks	Problems in electricity networks are becoming significant where electricity demand is increasing and network infrastructure is ageing. As loads grow and infrastructure reaches the end of its economic life, the potential cost of augmenting and providing support services for electricity networks is increasing exponentially.  DSM measures which can be used to relieve constraints on electricity networks. All types of constraint are being addressed, including capacity limitations, voltage fluctuations, reliability issues, etc. Such network-driven DSM measures are often more cost-effective, and may also have lower environmental impacts, than network augmentation
XVI - Competitive Energy Services (Energy Contracting, ESCo Services)  ACTIVE: http://www.ieadsm.org/V iewTask.aspx?ID=16&Task =16&Sort=0	Report of Phase 1 (July 2006 – June 2009) with a focus on the key results of the task work: "Integrated Energy-Contracting" model, "Comparison of Financing Options", "Comprehensive Building Refurbishment through EPC", "Energy-Contracting in the Residential Sector" and "Opportunity Cost Tool".  http://www.ieadsm.org/Files/Exco%20File%20Library/Key%20Publications/1006 08 T16-ExCo Final%20Task%20Report%20(2006-2009).pdf  Comprehensive Refurbishment of Buildings through Energy Performance Contracting. A Guide for Building Owners and ESCos. http://www.ieadsm.org/Files/Exco%20File%20Library/Key%20Publications/IEAds m-TaskXVI Bleyl,%20Schinnerl Comprehensive%20Refurbishment%20of%20Buildings%20through%20EPC 081118 vers2.pdf	An Energy Service Company (ESCo) takes over the technical and commercial implementation and operation risks and has to guarantee for it's cost and results. ESCo services are also well suited to implement innovative energy technologies and renewable energy systems.  The ESCo industry is an expanding business throughout the world contributing to the improvement of energy efficiency, control of energy costs and reduction of greenhouse gas and other emissions. The models of offering these services can get various forms like Energy Supply Contracting (ESC) or Energy Performance Contracting (EPC) resulting in diverse contract models and financing arrangements.

XVII - Integration of Demand Side Management, Energy Efficiency, Distributed Generation and Renewable Energy Sources  ACTIVE http://www.ieadsm.org/V iewTask.aspx?ID=16&Task =17&Sort=0	State of the art report. http://www.ieadsm.org/Files/Tasks/Task%20XVII%20- %20Integration%20of%20Demand%20Side%20Management,%20Energy%20Effici ency,%20Distributed%20Generation%20and%20Renewable%20Energy%20Sourc es/Final%20reports/Synthesis%20Report%20Final.pdf  Annexes  - Country reports - List of software tools for the analysis of integration of DR, DG, smart grids and energy storages - List of pilots and case studies http://www.ieadsm.org/Files/Tasks/Task%20XVII%20- %20Integration%20of%20Demand%20Side%20Management,%20Energy%20Effici ency,%20Distributed%20Generation%20and%20Renewable%20Energy%20Sourc es/Final%20reports/Synthesis%20report%20-annex%20final.pdf	Implementing an energy policy to promote energy efficiency, distributed generation and renewable energy resources, the share of distributed energy will increase, including the intermittent energy sources such as wind, solar, small hydro and combined heat and power (small and micro-CHP).  Intermittent types of electricity generation are difficult to predict. This makes electrical networks and market turn to integrated distributed energy resource as a solution. By combining distributed generation with energy storage and demand response, a country can decrease problems caused by distributed generation and increase the value of intermittent energy in the market.
XVIII - Demand Side Management and Climate Change (2010)	Report No 1: Interactions between Demand Side Management and Climate Change  Report No 2: Principles for Assessing Emissions Reductions from DSM Measures  Report No 3: Mitigating GHG Emissions and Delivering Electricity System Benefits  Report No 4: Funding DSM Programs with Revenue from Carbon Trading	<ul> <li>This will enable countries and organizations to:</li> <li>Understand the interactions between DSM and climate change.</li> <li>Develop methodologies for assessing the GHG emissions reductions available from specific DSM measures.</li> <li>Gain information about using DSM programs to mitigate GHG emissions, and about using GHG emission mitigation programs to deliver benefits to electricity systems.</li> <li>Identify opportunities for funding DSM programs with revenue from GHG emissions trading schemes.</li> <li>Explore whether time of use pricing can be used to achieve mitigation of GHG emissions.</li> <li>Gather the information necessary to launch and participate in deployment programs for demand-side technologies.</li> </ul>
XIX - Micro Demand Response and Energy Saving	Evaluating The Business Case for Micro Demand Response and Energy Saving (2010).  http://www.ieadsm.org/Files/Exco%20File%20Library/Key%20Publications/XIX%20Evaluating%20The%20Business%20Case%20 October%202010 .pdf	The domestic and SME sectors alone consume up to 50% of the electricity generated in developed countries, and are good targets for energy saving measures. The involvement of those demanding energy can help to improve overall system balance and thus reduce the peak generation capacity and spinning reserve. For domestic and SME customers to achieve these benefits, it is necessary to influence millions of micro loads. Relatively small amounts of demand flexibility can have large benefits in reducing peak capacity requirements.

XX - Branding of Energy Efficiency  ACTIVE	Check also Task V and Task VII.	Branding of energy efficiency products and services would increase their visibility and credibility. The task will explore the avenues available to national governments to promote branding of energy efficiency.  To be successful at branding, it would be necessary to work on three levels:
http://www.ieadsm.org/V iewTask.aspx?ID=16&Task =20&Sort=0		<ul> <li>products/services and suppliers,</li> <li>consumers</li> <li>strategic or policy level.</li> <li>At product/service level, one will have to be deal with several problem areas such as lack of accurate definition of product/service, strong relationship with maturity of electricity market, lack of awareness, lack of appeal, etc.</li> <li>At consumer level, it may be necessary to understand the consumer behaviour across markets as well as societal strata, by employing advanced marketing/branding theories such as cognitive information processing, emotion driven choice, etc.</li> </ul>
XXI - Standardisation of Energy Savings Calculations		Estimations concerning (projected) energy savings, emissions reductions or financial gains from energy efficiency measures are now rather common. But these estimations are conducted in such a broad range of approaches that they hinder (international) comparison of calculated energy savings.
ACTIVE http://www.ieadsm.org/V iewTask.aspx?ID=16&Task =21&Sort=0		The overall aim is to identify basic concepts, calculation rules and systems for Energy Savings Calculations (ESC) standards. Both energy savings, emissions avoidance calculation methods and standards will be evaluated for efficiency activities. In addition to this a methodology should be developed to nominate and describe the several Demand Response products.
XXII - Energy Efficiency Portfolio Standards	Check also Task XIV	Many countries have set policy targets for reducing emissions and have identified energy efficiency as one of the measures along with coordinated efforts to secure funding arrangement for these programmes. Several states in the United States and European countries have adopted Energy Efficiency Portfolio
http://www.ieadsm.org/viewTask.aspx?ID=16&Task=22&Sort=0		Standards (EEPS) like programmes as part of their efforts to mobilise energy efficiency improvements. These programmes provide market based instrument to utilities to achieve defined target for energy savings.

XXIII - Role of the	This task is co-ordinated with ISGAN.	The aim is to identify and where possible quantify the risks and rewards
Demand Side in		associated with Smart Meters and Smart Grids from the perspective of the
Delivering Effective	Check also task XIX.	consumer, both now and in the future. By identifying the potential risks and
Smart Grids		rewards the Task would seek to develop best practice guidelines in order to
		ensure the demand side contributes to the delivery of effective Smart Grids.
<u>ACTIVE</u>		
Starting up		From the point of view of ordinary users, who are uninterested or unable to play
		an active role either on the generation or the demand side, a Smart Grid may
		look like a plain traditional network, to which a number of time-variable, non
		dispatchable generators have been added, but one that needs costly and
		sophisticated technologies in order to deliver an acceptable service (equal at
		least to the one supplied by the original network).
		Thus, a first step in the effective deployment of Smart Grids needs to involve the
		engagement of customers so that they understand that a Smart Grid is
		instrumental to the implementation of certain measures (renewable generation,
		efficiency, demand response) that facilitate the reduction of greenhouse gas
		emissions and make the use of energy a sustainable activity. In this perspective it
		is important for every user to the able to take advantage of the "smartness" of
		the Grid, otherwise customers will simply end up paying the cost of the Smart
		Grid without receiving any of the benefits.
XXIV - From Theory		Closing the loop between behaviour change research theory, successful policy
to practice		implementation and positive outcomes for the energy user from DSM projects.
		Key questions:
ACTIVE		Understanding which categories of (energy) behaviours need to be addressed
In preparation		to maximise impact
		How these behaviours come about and why more sustainable behaviours are
		shunned by energy users
		How decisions come about, and what the roles of norms, values and attitudes
		are; what the individual and more systemic barriers and drivers to these
		behaviours are
		What (policy) instruments could be effective and efficient in reducing or
		removing these barriers or facilitating the drivers; and