



# IA DSM – The way forward

Implementing Agreement on Demand Side Management Technologies and Programmes

# Agenda item 2

- Evaluation of the request for extension (plenary)
- Determine topics for “the way forward”
- Break-out sessions
- Reports to plenary and assignments for the upcoming months.

# Evaluation of the request for extension

- Last EXCO: Debate on the major elements for next term
- EOT was written (Anne/Rob): meeting reports are weak according to secretariat standards.
- Writing of strategy part: Hans/Rob
- Input from limited number of EXCO members & desk officer.
- Vote on version “to be submitted”
  - 3 conditional (= no), rest agreed.

# Evaluation of the request for extension

- Review by EUWP, feedback from chairs of ECG and EUWP
- Text adapted & edited, table of “answers to the questions” written by Hans.



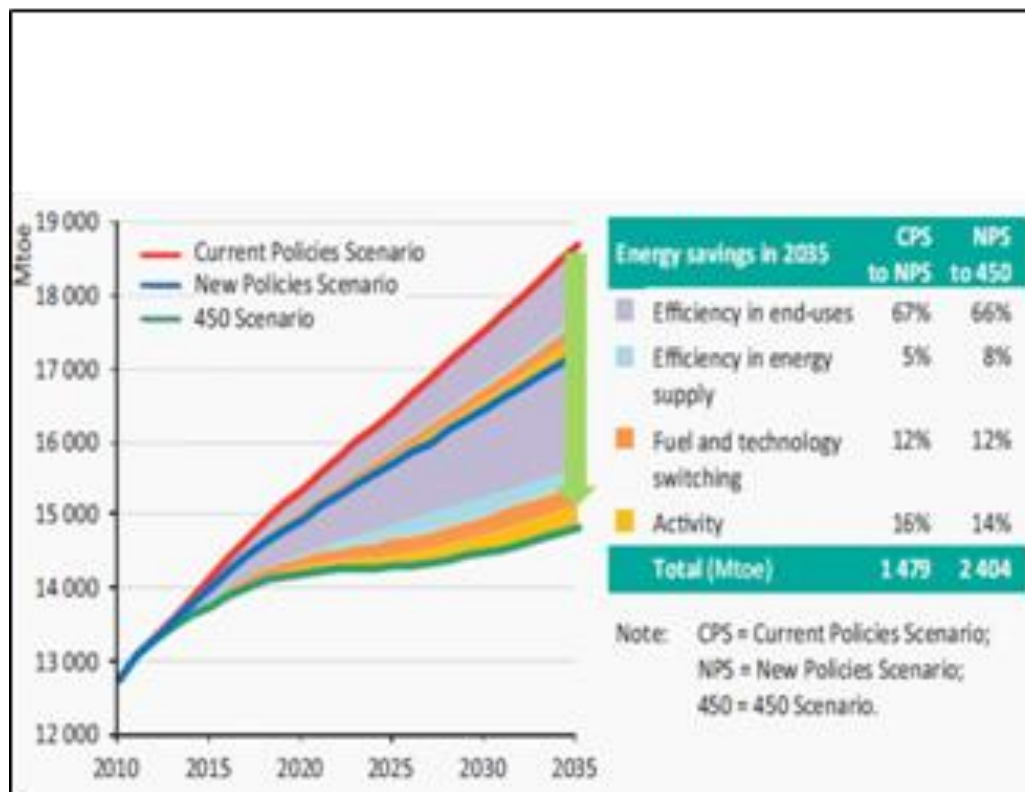
# IEA – Demand Side Management Request for Extension

Implementing Agreement on Demand Side Management Technologies and Programmes

# Some history - Facts

- Established in early nineties (1993)
- 14 Members
  - Austria, Belgium, Finland, India, Italy, Netherlands, Norway, New Zealand, Korea, Spain, Sweden, Switzerland, United Kingdom, USA
  - European Copper Alliance, R.A.P.
  - Interest from China, South Africa, Thailand & Middle East
- 23 Tasks (17 finished, 6 current)

# Energy Efficiency is Core Business



# Objective (1)

- Demand Side Management (DSM) refers to all changes that originate from the demand side of the market in order to achieve large-scale energy efficiency improvements by deployment *and use* of improved technologies.
- Depending on market organisation in each country such changes involve different actors. In many cases the utilities play an active role.



# Objective (2)

- The Programme has two major objectives directed at its two major stakeholder groups. The Programme will provide to:
  - (a) governments of the participating countries, increased capabilities to develop policies and programmes for more effective use of DSM and energy efficient products; and
  - (b) energy businesses with the information and tools necessary to create new cost-effective products and services in response to domestic and global opportunities;

# Organisation of the programme

## LOAD SHAPE CLUSTER

- This cluster includes Tasks that seek to impact the shape of the load curve over very short (minutes-hours-day) to longer (days-week-season) time periods. Work within this cluster primarily increases the reliability of systems.

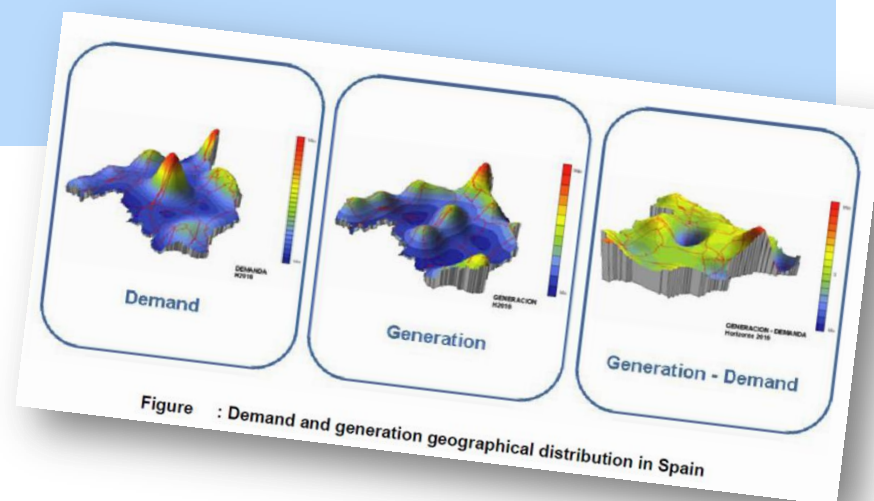
## LOAD LEVEL CLUSTER

- This cluster includes Tasks that seek to shift the load curve to lower demand levels or shift between loads from one energy system to another. Work within this cluster primarily targets the reduction of emissions.
- *The two clusters cover both technology and non-technology aspects (economy, sociology/behaviour, monitoring).*

# Present tasks

- Competitive Energy Services (Energy Contracting, ESCo Services)
- Integration of Demand Side Management, Energy Efficiency, Distributed Generation and Renewable Energy Sources
- Branding of Energy Efficiency
- Standardization of Energy Savings Calculations
- The Role of Customers in Delivering Effective Smart Grids
- Closing the Loop - Behavior Change in DSM: From Theory to Policies and Practice

# Results this term



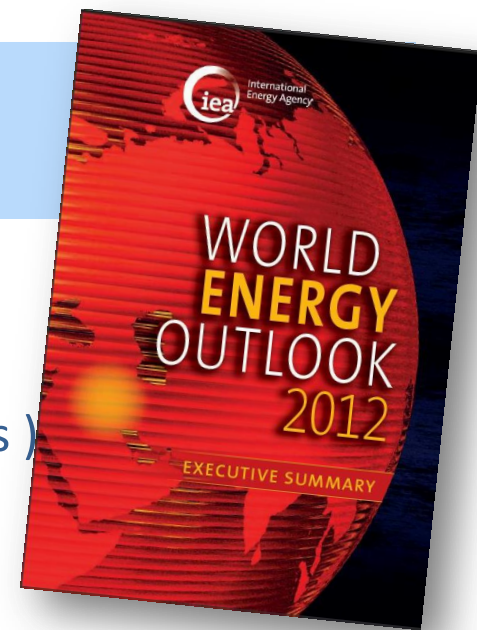
## Main Publications:

- Best Practices in Designing and Implementing Energy Efficiency Obligation Schemes Research Report (With RAP)
- Integration of Demand Side Management, Distributed Generation, Renewable Energy Sources and Energy Storages Final report
- Comprehensive Refurbishment of Buildings through Energy Performance Contracting
- Interactions between Demand Side Management and Climate Change
- Report on Energy savings calculation final version

# Products (Short list)

Products as result of the work in the several tasks:

- publications of results (analysis, overviews and conclusions )
- articles for professional journals, including peer-reviewed academic literature.
- workshops and presentations at workshops and conferences
- forums for dissemination and/or discussion with possible users, customers, decision-makers, etc.
- growing pool of individuals and organisations in each country that develop new expertise in DSM issues and solutions
- training seminars and courses
- expert platforms
- social media presence



# New options

- smart meters and feedback systems
- increasing energy prices (and market design issues)
- security of supply - study how energy systems respond to crisis
- models and initiatives for boosting technologies, aggregated procurements, dynamic top-focused standards, clearinghouses for programmes and projects e.g. CDM/JI related
- energy efficiency ownership (new aggregators) / branding of Energy Efficiency
- networking and initiatives to reinforce services and promotions (ESCOs, marketing, municipality involvement)
- rate-design by performing a comprehensive analysis of various economic incentives and fiscal measures, including pricing systems, tariffs and levies. Develop new tools for international comparison of the impact of different tariff systems and energy labels on GHG emission reduction
- regulatory matters related to energy efficiency - What areas of energy efficiency are best regulated and what should be purely market-based
- bottom up evaluation /monitoring and verification
- Policy instruments: standards and labelling, white certificates (follow up practices), tax policies , demand response (legal property right) certificates , optimizing investments
- Behaviour Change and better understanding of implementation of DSM measures

# Research area's

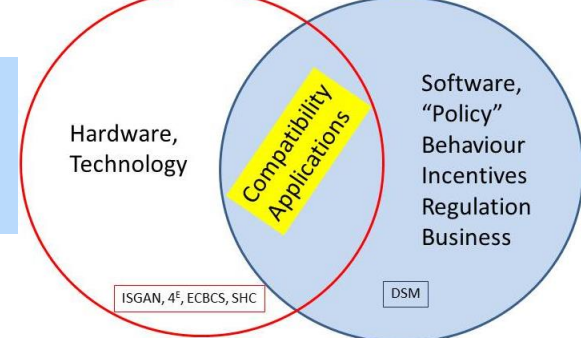
- Integration of Demand Side and sustainable smart grids
- Role of end-users and smart grids
- Social aspects of technology deployment and the use of new technology
- Monitoring and standardisation of energy efficiency

# Results of the evaluation

- Results of tasks are useful and appreciated
- Better outreach item for next term
  - DSM University (On line DSM course)
  - New website
  - Improve social media
- Work on participation/new members



# Collaboration



- 4E:
  - The 4E Implementing Agreement will specifically focus on electrical end-use equipment. Industrial and commercial equipment as well as equipment mainly used in households is included.
- ISGAN:
  - ISGAN creates a mechanism for multilateral government-to-government collaboration to advance the development and deployment of smarter electric grid technologies, practices, and systems. It aims to improve the understanding of smart grid technologies, practices, and systems and to promote adoption of related enabling government policies.
- ECB:
  - Sharing the ESCO options and explore the further use within the build environment.
- IEA secretariat. (WEO / Coordination Groups / Workshops)

# Result

- Proposal of EUWP: 2 year extension from EUWP to CERT

# What went wrong “by my standards”

- I have not made a critical path analyses in time. The six extra weeks EUWP demanded were unexpected (due 20 June).
- I accepted to run the IA with Anne and Hans (and support of Sea on visibility), who both had to deliver beyond their assignment
- The EXCO does not give priority to the task, I should not have accepted that.
- We should have linked our work more visible to other IEA work and define the research areas earlier.
- The tasks much be stronger (to much trust in excellent OA's).
- We fail in updating our website.

# Feedback from our 'source' in EUWP

- Potential and achievements were unanimously recognized, but drafting of the documents was not satisfactory as some critical questions were not addressed directly or the answers were lacking details and explanation
- the Secretariat was more concerned with the available resources (experts directly linked to the IA), although I think they are missing the networks & platforms that exist and are contributing substantially to several Tasks
- the working party was missing a clear definition of the strategy : there was a confusion (at least in their mind) with the « traditional » split between load level and load shape, the focus on the combination between potential and acceptance being put aside (or maybe not understood?), and the strategy not being detailed or translated into a concrete programme and/or planning.
- In this regard, we could find a very good source of inspiration the work being done under other IAs (eg. EBC (former ECBCS) for their own request of extension).

# Feedback from our 'source' in EUWP

- There were very interesting suggestions about areas for future work, but they need to be streamlined and to be translated into a concrete strategy and action plan.
- Nevertheless, they were all confident that the DSM IA would be able to take up these important challenges, both in terms of strategy and of available resources.
- The idea behind this 2 year extension recommendation – which was proposed by the Secretariat – is mainly to invite our IA to give a strong response to these challenges, and to review the situation after this period and make sure that the DSM IA can go on on a stronger basis.
- This is NOT intended to express distrust with respect to the completed work and of the future of the program as such.

# Input from EUWP

- Not yet

# Input from Steve

- Not in due time
- Send around on Monday
- Gives good input on a number of points previously made.

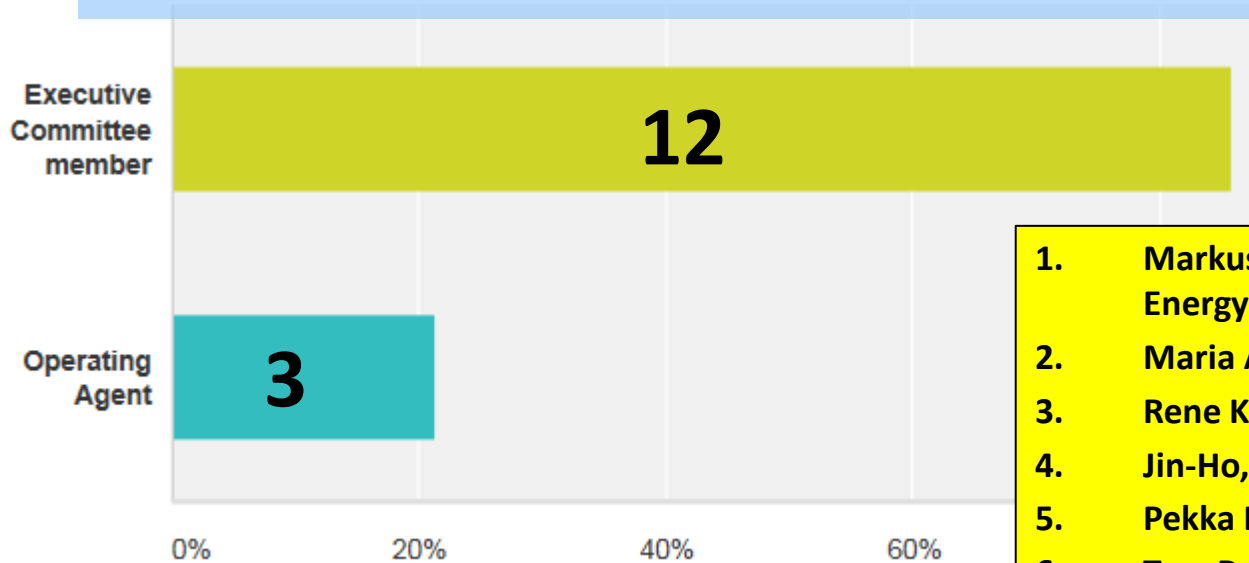


# The way forward

## Compilation of the answers to the questionnaire



# Who are you ?



1. Markus Bareit, Switzerland Federal Office of Energy
2. Maria Alm, Sweden, Swedish Energy Agency
3. Rene Kamphuis, NL, TNO
4. Jin-Ho, KIM, South Korea and KEMCO
5. Pekka Koponen, VTT, Finland
6. Tom Bastin, DECC, UK
7. Antonio Capozza, ITALY, RSE
8. Hans De Keulenaer Copper Alliance
9. Paul Atkins NERI New Zealand
10. Dr Sea Rotmann SEA - Sustainable Energy Advice NZ
11. Jan W. Bleyl, Austria and Germany, Energetic Solutions
12. Larry Mansueti, USA, US Department of Energy
13. François Brasseur Belgium Federal Public Service (Ministry) of Economy
14. Andreas Krüger Enge, Enova, Norway

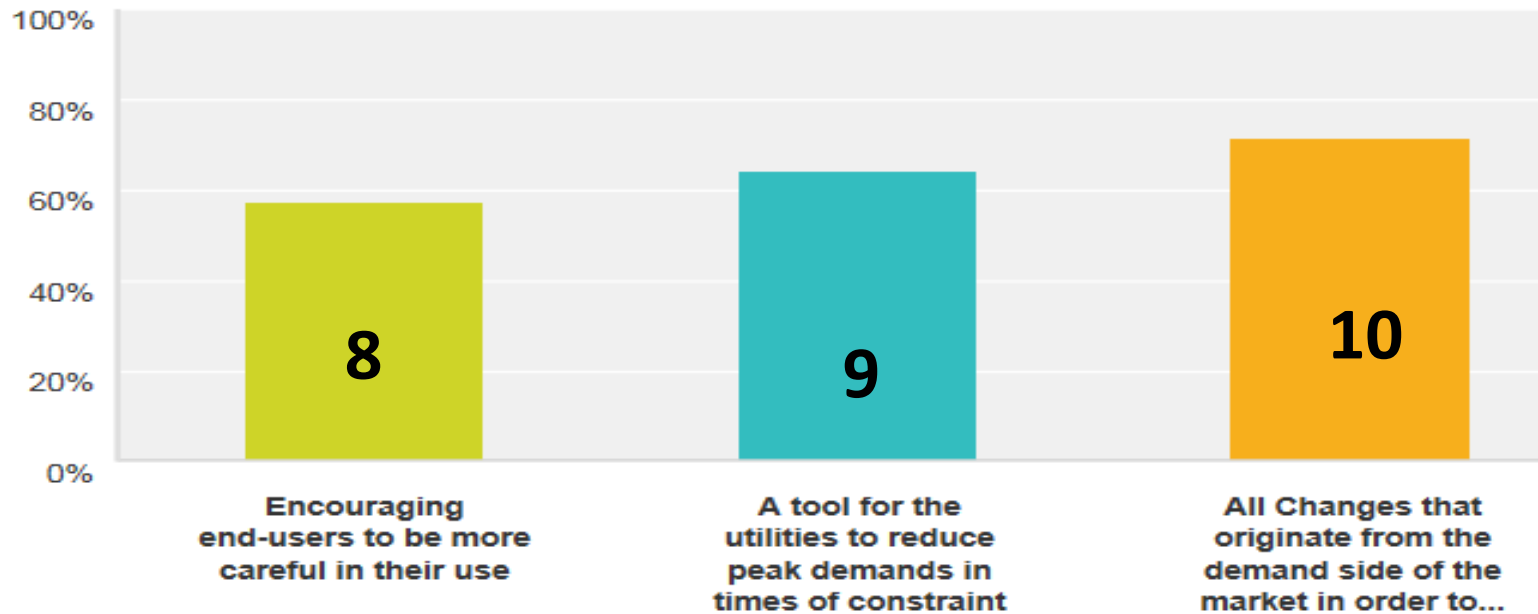


# 1: The concept and relevance of DSM

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# What do you understand by DSM in your country/organisation?

Svarade: 14 Hoppade över: 0



Issues related to both load level as well as energy efficiency.

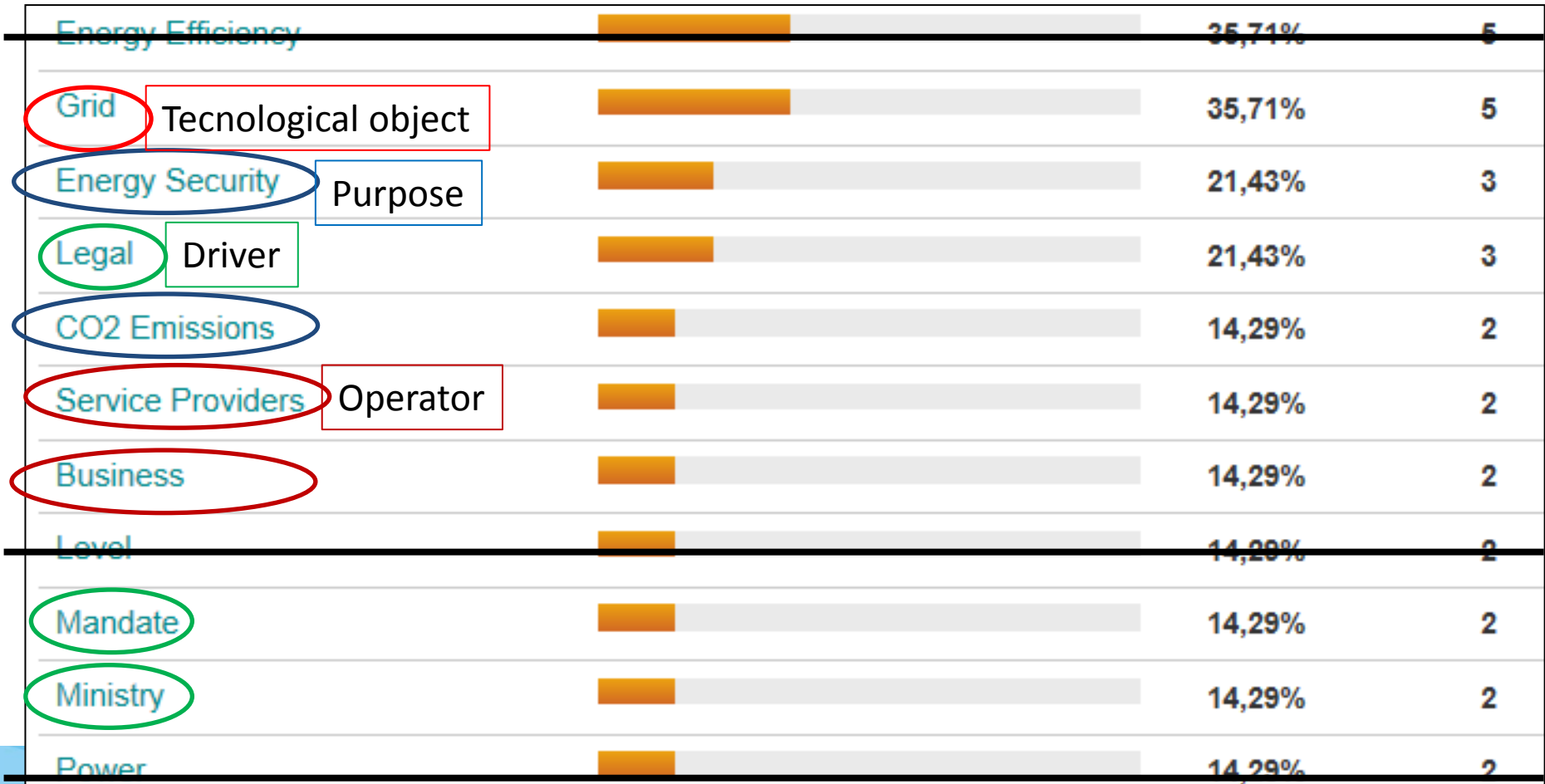
(I would like to use the formulation energy efficient use rather than "to be more careful in their use" ).

**All the given alternatives are somewhat stupid**, but the template does not allow answering without choosing one of them. Active participation of demand side to the energy markets thus **reducing costs**, consumption of fossil energy sources and **environmental impact** and improving the **security of energy supply**.

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Facilitating the **integration of renewables**

# What is the objective/reason for engaging in DSM for your organisation/country?



Tecnological object

Purpose

Driver

Operator

# What is the objective/reason for engaging in DSM for your organisation/country? -2

Energy efficiency and CO2 emissions target by law. Energy security (phase out of nuclear power)

DSM related research issues are one of many ways of contributing to the **transformation to a sustainable** energy system. ....We also welcome **interdisciplinary** research groups. In R&D on smart grids, smart cities, the consumer perspective and the benefit to consumers is of importance alongside more technical system issues.

Add negative power to the market. **Flexibilize/modernize grid** operations.

...we are interested in introducing and/or exchanging Information and the methodologies related to **deployment of Energy Efficiency technologies** and appliances. In Korea, DSM is formalized and implemented to increase Energy Efficiency, to decrease Supply demand and to reduce Green House Gases ..... the designated Energy Suppliers must set up an investment plan to DSM and implement it annually.

DSM is used to **create benefits to the consumers** (improves operation of energy markets and the grid, reduces costs and environmental impact, saves resources.), and to reduce the costs of grids and of energy purchase for several other actors in the energy supply chain. The electricity system operator, the electricity retail suppliers, consumers, balance management service providers etc. use DR. For EE there is legislation and requirements.

# What is the objective/reason for engaging in DSM for your organisation/country? -3

DSM, ..... is one of the most cost-effective means of reducing or managing energy demand to **reduce emissions, lower fuel bills for consumers .....improved business competitiveness**, and increased **energy security** through reduced demand

DSM requires building, home, grid and industrial automation systems, which are **drivers for copper use**.

Particular interest in **behaviour change** for greater efficient use of electricity. No legal requirements but government's Energy Efficiency and Conservation Authority active in this area.

Largely hydro and intermittent renewables mean dry years and need for **quick DSM** Also issues with peak demand in summer due to cooling (A/C) loads from heatpumps. There is a NZ Energy Efficiency and Conservation Strategy but it doesn't really regulate much anymore. A legal bill created the Energy Efficiency and Conservation Authority of NZ in 2001.

DSM is topic of consultancy. It is applied by clients, who want to implement DSM projects as well as **energy service providers**

A majority of US states have **laws that mandate a** certain level of ratepayer-funded energy efficiency. US electric utilities increasingly use DSM for a number of **business reasons**, outside of any legal or policy reason to do so

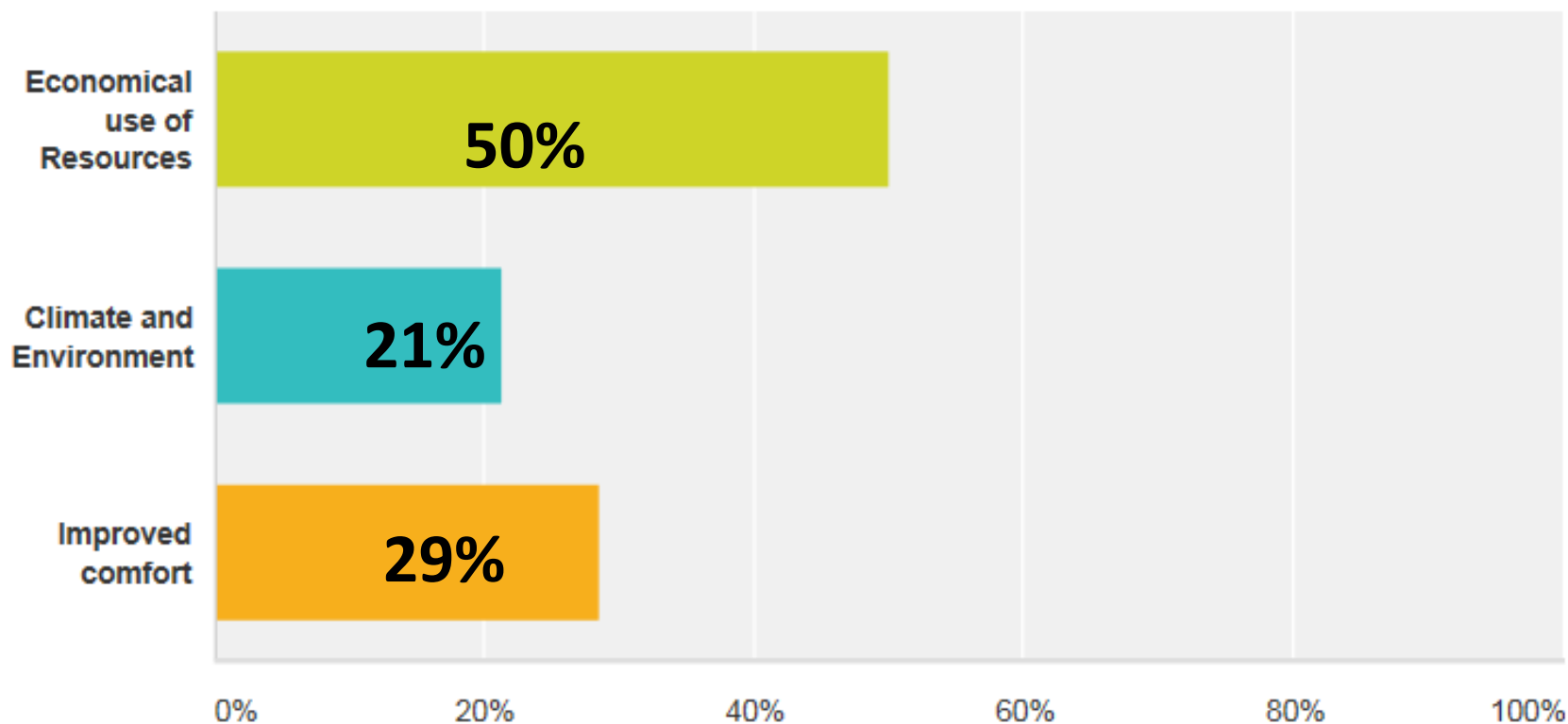
# What is the objective/reason for engaging in DSM for your organisation/country? -4

With a mandate to, among other, contribute to **increased security of supply**. DSM is an important aspect of both reducing energy and load demand

- allow more **flexibility and facilitate the management of the grid**, and so avoid the need for costly investments in the grid
- allow best practices regarding EE policies and energy services to be promoted in the country
- find and promote efficient ways to involve consumers in EE
- reduce energy cost and CO2 emissions

# What is the most important motive for energy efficiency (and DSM)?

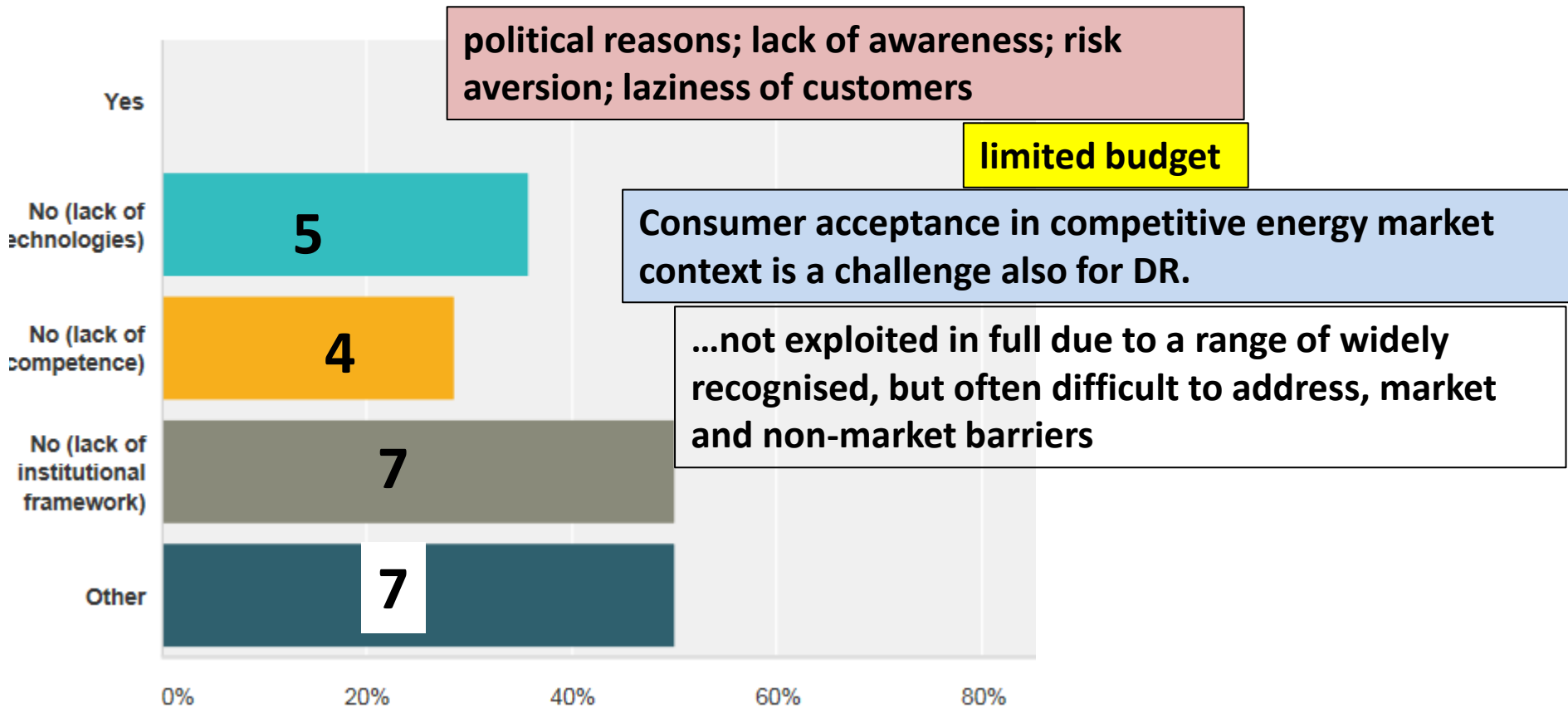
Svarade: 14 Hoppade över: 0





# Are the DSM opportunities (in your country) used in full and if not why?

Svarade: 14 Hoppade över: 0



Lack of integration of the markets for electricity and heat limits flexibility options in the electricity system, and hence the potential for DSM

...issues with competence (especially among tradespeople) and serious issues with bad social norms such as very cold, draughty, uninsulated housing

# How can work in the DSM Programme improve the use of DSM for you?

1. **Networking**; exchange of experiences in specific tasks
2. ... a **system perspective** in issues related to consumers and other end users. (Both social science as well as technology).
3. Collect information to increase **synergies** between stakeholders.
4. by Increasing **applicability** of Task in DSM Programme.
5. ...Exchanging information and **learning** what works and what causes failures, and what are the similarities and differences between countries are useful.
6. A focus on exploring the **barriers** to effective DSM

# How can work in the DSM Programme improve the use of DSM for you?

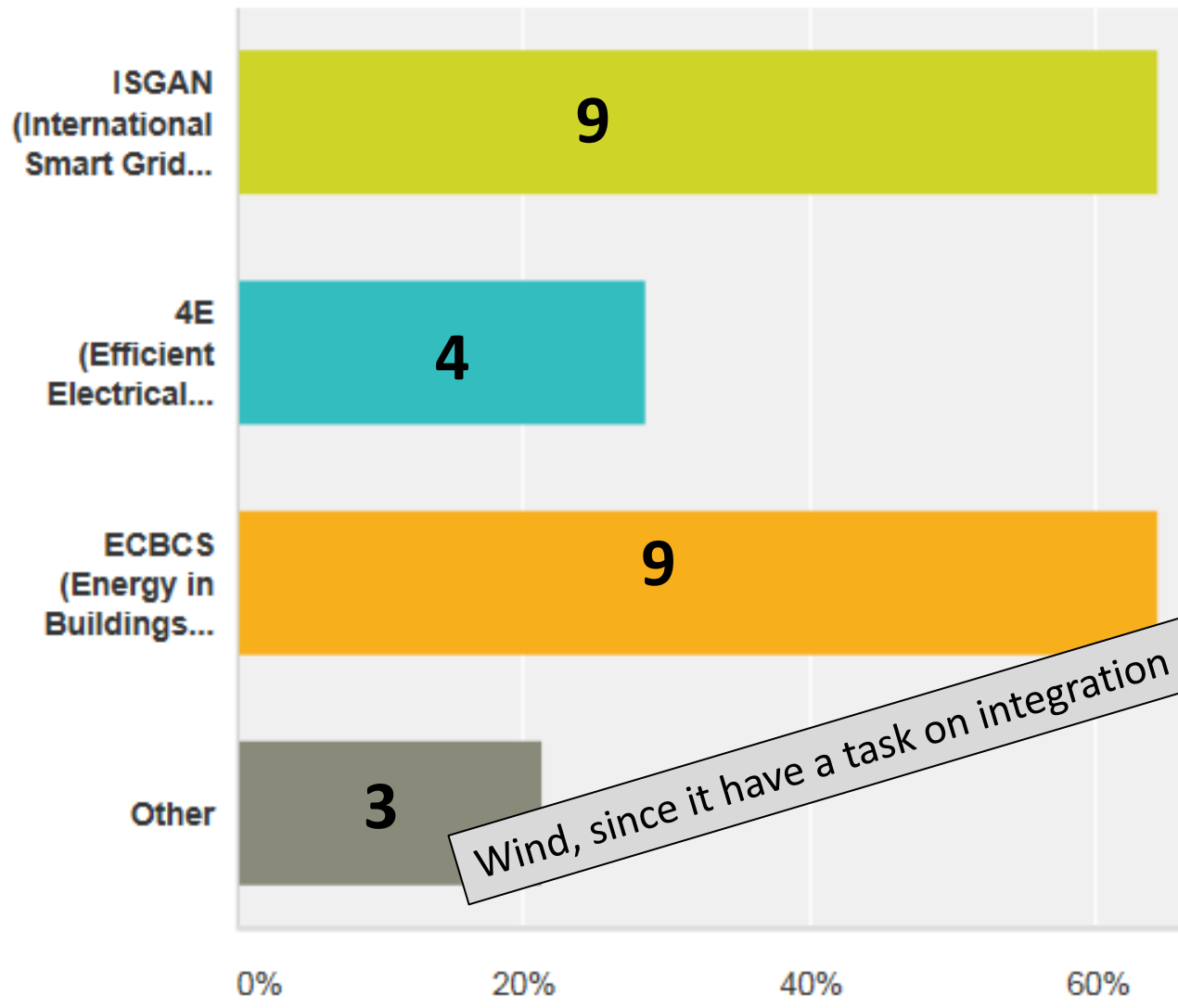
1. **Comparison** with other successful experiences in other countries
2. DSM should provide a clear overview of the required flexibility options in the energy system for various levels of sustainability and describe the energy services (electricity, transport, heat) that can supply this **flexibility**.
3. ...., particular interest in **behaviour** change
4. contribute to better **business models**, publications, know how transfer behaviour change ...
5. if there are methods or insight **transferable** to my country
6. Increased knowledge of the **drivers** for end-use behaviour and how the possibilities of i.e. Smart Meters could be realised.
7. Through defining a clear and thorough strategy and communication. ...., and by clearly stating the **concrete advantages** of managing the demand side with appropriate and efficient tools, that can understood easily, also by using success stories for illustration



## 2: Collaboration (with whom, on what level)

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# Collaboration with other implementing agreements



# How can we make better use of ECG/BCG?

- country delegates of the different programmes should **exchange more and work closer** together.
- ...we need to work on actual activities (such as **common tasks**) in order to get a vivid collaboration. Only information seldom works alone. I have limited time for such activities but if it is performed through tasks then operating agents could manage such collaboration.
- I have no idea so far.
- The CG's represent opportunities to **explore synergies between the different IAs**, potential for joint work and also to avoid duplication.
- We should have a **more focused scope** (and maybe more concentrated in specific fields)
- I think the model of the **Sector Forum for Energy Management** could work well here. Dedicated individuals participate to liaison bodies and report each meeting on what happened at the last meeting.
- These are a good idea but there are a number of practical challenges in engaging from NZ. However, we do engage as much as possible, especially through our operating agent .
- possibly
- theoretically yes. but practically am time limited on what I can do outside of US

# Do you have any experience from e.g. IRENA and REEEP?

- The IEA Secretariat (Energy Efficiency Unit) conduct lots of work on energy efficiency policy analysis that is of direct relevance to the work of the DSM IA, and the work of the IA could similarly be a useful input to the EEU. I think both would benefit from closer links – this could be helped by **more formal links into the policy-side of the IEA (Energy Efficiency Unit)** instead of/in addition to those we currently have into the technology side of the house. As a policy-based IA such links are important
- Yes. Some of these organisations (such as Irena) are more formal in their partnership programs than others. **REEEP appears to be very approachable.**
- NZ has only just joined IRENA and has not been much involved in IPEEC and REEEP as far as I am aware. NZ does not engage as much in international collaboration as other countries which is largely due to the costs involved in traveling
- There are discussions and joint sessions between EUWP and IPEEC. Several common topics have been put forward for possible collaboration (but transport will come first).

# EEWP and EUWP

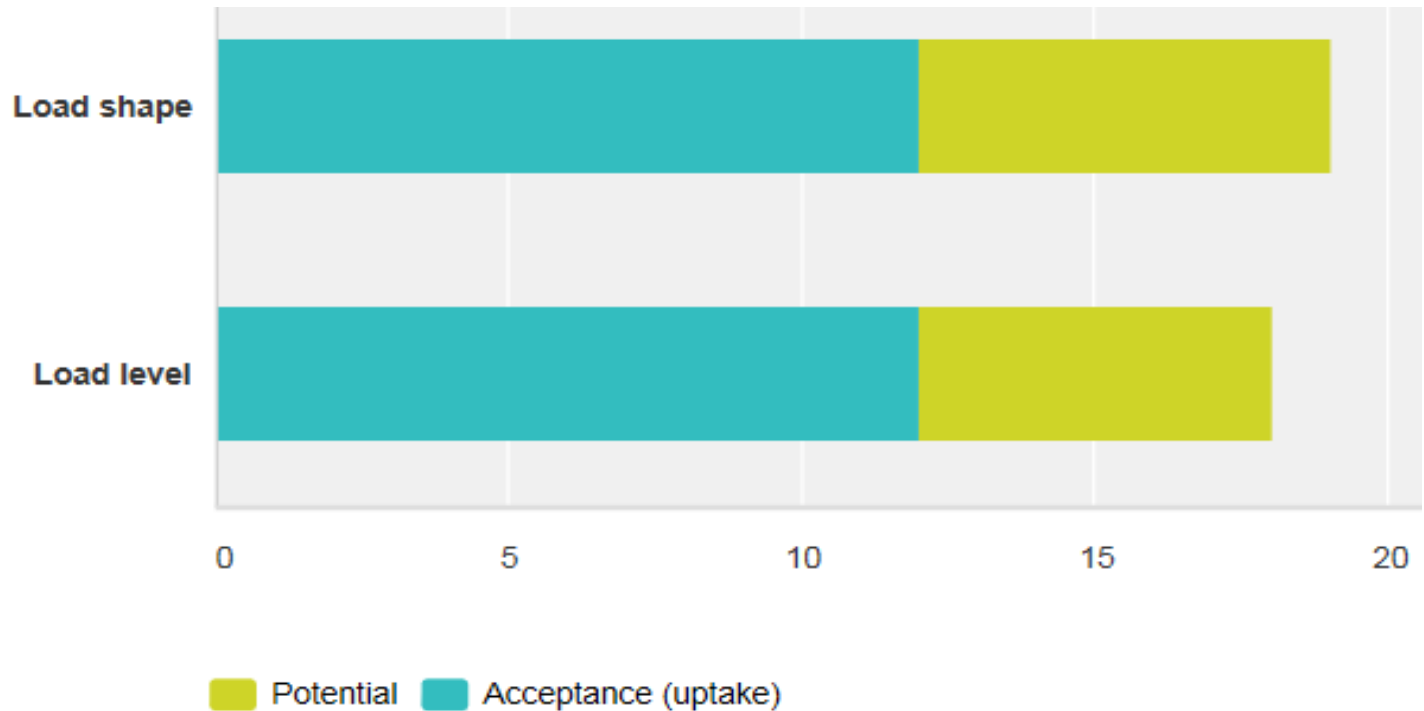
- the 2 working parties should **delegate someone who is responsible for DSM** and somebody of DSM (chair?) should report to him periodically
- I think that **EEWP is important to involve** when we are involving issues related to policy and energy efficiency. Maybe they could be involved in reference-groups in future work?
- As Chair of the EEWP, I have asked the Secretariat to consider how we can make best use of the policy work currently being done under the auspices of the EUWP and IAs. **Joint workshops around the policy/technology** nexus have been helpful, but I also think there is a good case for regular presentations (perhaps once per year) of recent findings from relevant IAs focussed on policy (DSM, 4Es etc) at the EEWP.
- EUWP: the VC Electricity should attend most of our meetings. **Reporting to EUWP and asking for feedback**, as well as asking how our work can fit into the IEA work in general (ETP, workshops, etc.)
- EEWP does not have responsibility for any of the IA, which means that EEWP does not get regular updates on the work within IA - this is a problem. Especially the work of the **DSM should be reported on regularly to the EEWP**. The agenda of the EEWP meeting are generally packed - but it could be an idea to have an **annual DSM - EEWP (and EUWP) workshop**





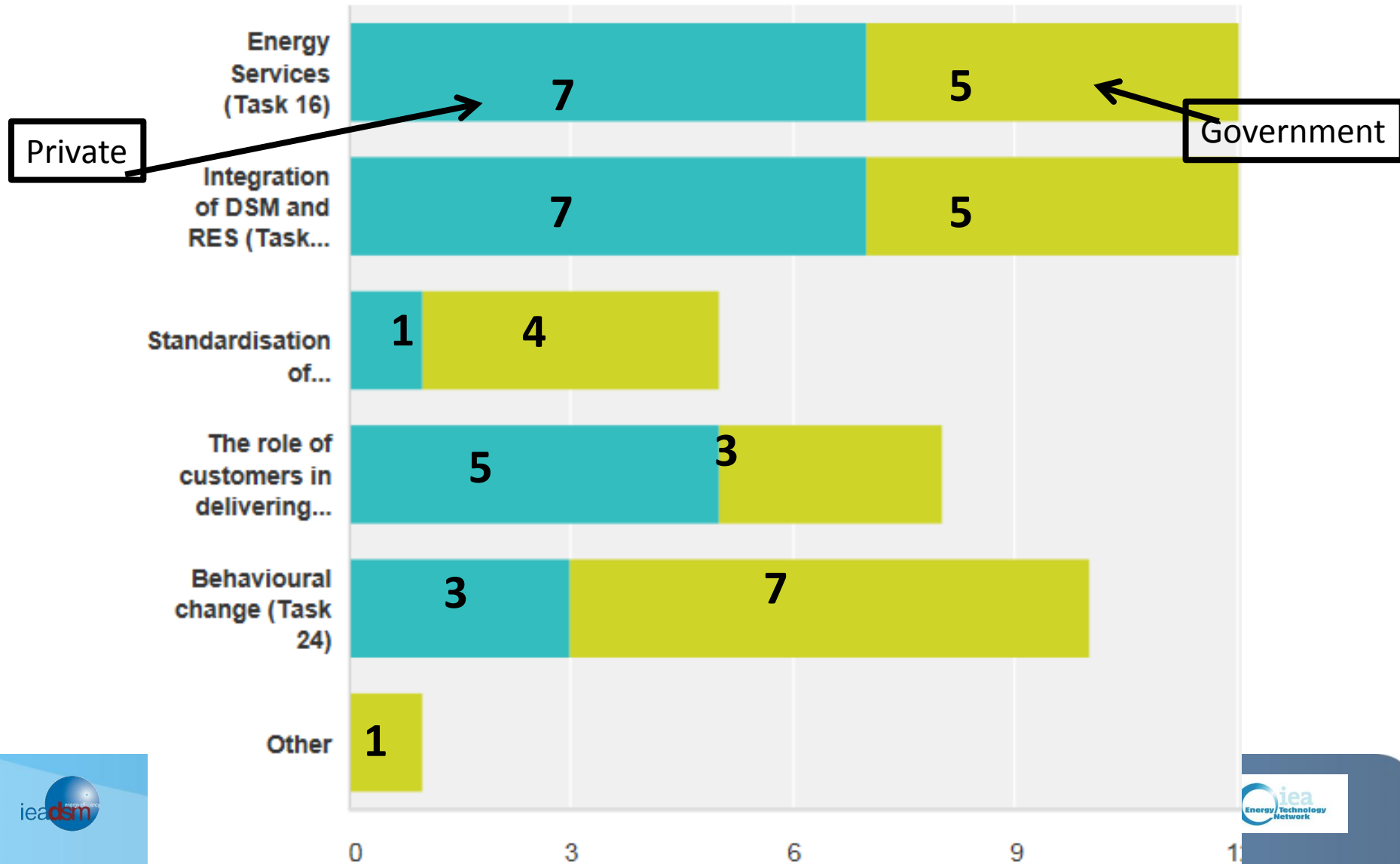
# 3: Tasks for DSM

# Which of the combined aspects are the most important?



	Potential	Acceptance (uptake)
Load shape	53,85% 7	92,31% 12
Load level	50% 6	100% 12

# Which Task could be supported by your government and/or the private sector?



# Comments

- next to government and private sector also **research** could play a role
- It is quite **hard to find private funding** for some of the work within DSM. So here private sector should be viewed as could (but that is probably hard).

# Comments

- The possibilities to get funding are slim, because connection to a bigger project is required in order to get funding from the government. The DR community is somewhat interested on ways to improve demand side flexibility. Tasks 21, 23 and 24 ignore DR and flexibility. Also in the EOT and DSM university are not convincing for those who seek to **improve demand side flexibility in the competitive energy markets**.
- I am taking the question mean whether the relevant sector has skills/interest in the area not whether we (or the private sector) are interested in participating in the specific task

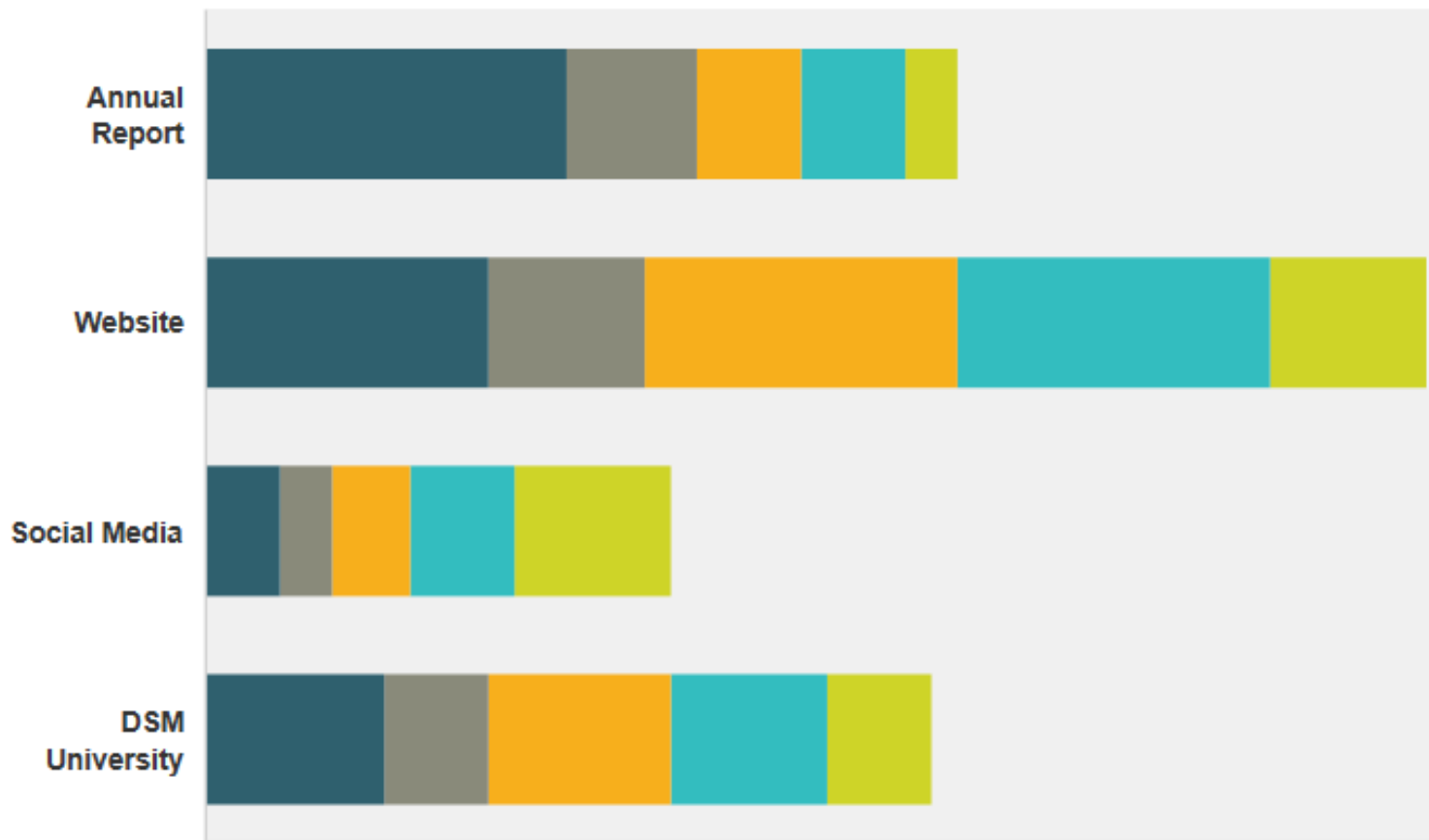
# Which new Tasks are important for your government and/or private sector

- ?
- Smart grids and related issues, consumer perspectives and end users practices as well as market services (innovation).
- Task 17
- To introduce Energy Efficiency Resource Standards(set the energy saving target to the energy suppliers, give a tradable certificate in the market)
- Integration of DR and Energy Services to the energy markets (including competitive electricity market) Integration of DSM and RES to the competitive electricity market. Experiences on customer acceptance of automated DR and related field tests. DR for smart grids and energy markets. My answers are more or less biased to DR, because the local EE experts have been passive to the direction of IEA DSM via me.
- At present we have no priorities for new tasks
- Task 24 on behavioural change
- Task 17 Task 21 DSM University
- None at this stage
- Task 24 extension
- energy services, behaviour change
- cant think of one at the moment
- DSM in passivehouses and NZEBA and Combined Heat Management Programme certification (including transportation)

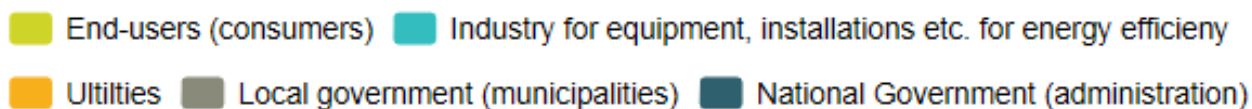
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# Outreach and dissemination. Which of the following are relevant?



0





# How do you value and prioritise the combinations in the above?

- I suggest to **include research**. I get several inquiries from researchers about DSM. It is difficult to get the awareness of the end-user and probably we should weight this more.
- **Why is not researchers on this list?** I lack the R&D perspective.
- **DSM University should look in the future** and not in the past. Then it would be relevant for dissemination and getting industrial partners.
- The **website is the most important and is a useful hub** of information, and the annual report a useful summary of progress and communication tool within the Department. Not particularly convinced that social media has any real impact and the DSM university is still at a formative stage so hard to judge.

# How do you value and prioritise the combinations in the above?

- The **Annual Report has the highest priority**
- Mainly **website and DSM University**. Limited role for social media.
- The **website needs updating and be easier to navigate**. Social media is good for people who use it but needs time and effort that has to be put in from the IA. Not sure how many people actually read the annual report but it is still an important document. The DSM University has great potential but needs money and people who will be paid to build it up and contribute to it.
- **Sensibilising the end-users and the local government** (and national government as second) would really help promoting the crucial importance of DSM

# Overall comments

- I did not understand question 10 but had to mark something.
- ...on the strategy paper that was presented at the EUWP ....did not really manage to underline R&D and it did not present which areas of interest we should focus on in the future in a clear way. ....I am not so sure that potential and acceptance are the most relevant ways to analyse these areas of interest from.... I also believe that it is important that DSM have a balanced and well-functioning dialogue with the IEA secretariat and other IAs (and related organisations). I would like to repeat the **Swedish suggestion on an evaluation of DSM** and how it is organised/performed in order to learn and improve, a strategic communication plan as well as looking into and learning from other IAs on policies for different processes and routines.

# Overall comments

- I am not sure yet
- In our future energy system it is the **flexibility** or response of the demand side that saves energy, environment and costs. Load level and load shape are mostly secondary issues when the generation varies depending on the wind, sunshine and demand of heat.
- **I struggle with the terms load shape, load level, acceptance and uptake. If we want to communicate more broadly to end-users, we need to phrase DSM in terms relevant for them.**
- **The DSM IA is not moribund by a long way, but it does suffer a little bit from a somewhat 'oldschool' look and feel.** The new Tasks 23 and 24 which focus on the end user and human behaviour are very important to show our unique placement among IAs in that we look beyond just technology or policy but at application in the 'real world'. We need to build on this skill and present it better to the EUWP and the outside world. No one else on an international level is doing this work.
- Thank you!