The H2020 EURECA Project

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Green Days @ Anglet 2019

The H2020 EURECA Project

Support sustainable ICT data center procurement in the public sector

Why worry about sustainability ?

- 3% of world energy is used by data centers (10% in 2030)
- Massive demand on digital and cloud services : 90% of applications in the cloud
- Data centers' GHG emissions to exceed the aviation industry
- In the UK, objective of 80% reduction of GHG emission by 2050 compared to 1990
- In the UK, universities' electricity bill 90£ (60% on servers), even higher for banking sector
- EU public sector spending is around 2,200 billion € (19% of GDP)

Challenges in public sector procurement

- Complexity of procurement and legal uncertainty
  - Frameworks, decentralization, legislations
  - Procurers tend to favor past practices
- Insufficient priority
  - Low budget for ICT, split incentives, not core business
- Lack of technical expertise
  - Standards and best practices
  - Evaluation of technologies

Energy in data center procurement

EURECA project

- Assist the public sector in procuring innovative energy efficient and environmentally sound data center products and services

- Started 1st March 2015, for 30 months

- Academic and industrial partners across the EU (UK, Germany, Netherlands)

- 1 university (UEL), and 7 industrial partners
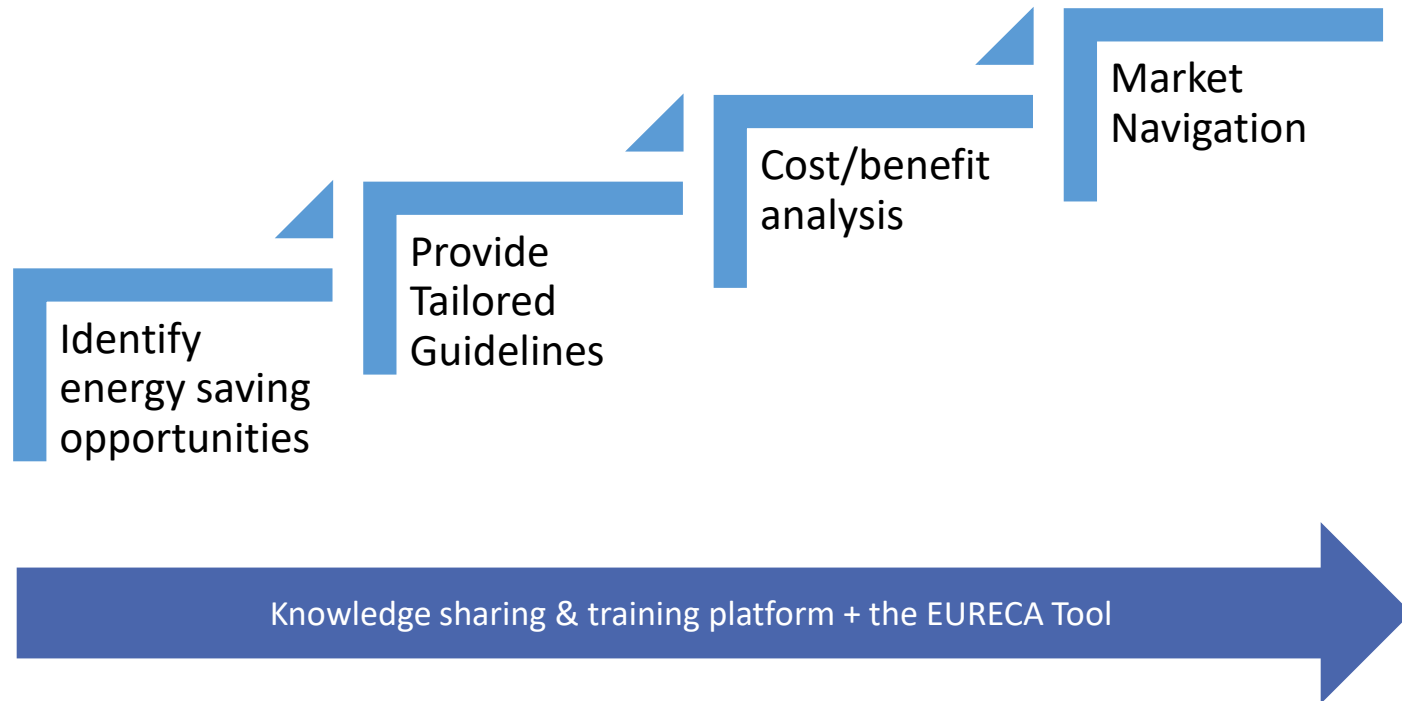
- EU H2020 funded project

Energy in data center procurement

Market Navigation

Cost/benefit analysis

Provide Tailored Guidelines

Identify energy saving opportunities

Knowledge sharing & training platform + the EURECA Tool

- Package standards and best practices into a unique tool
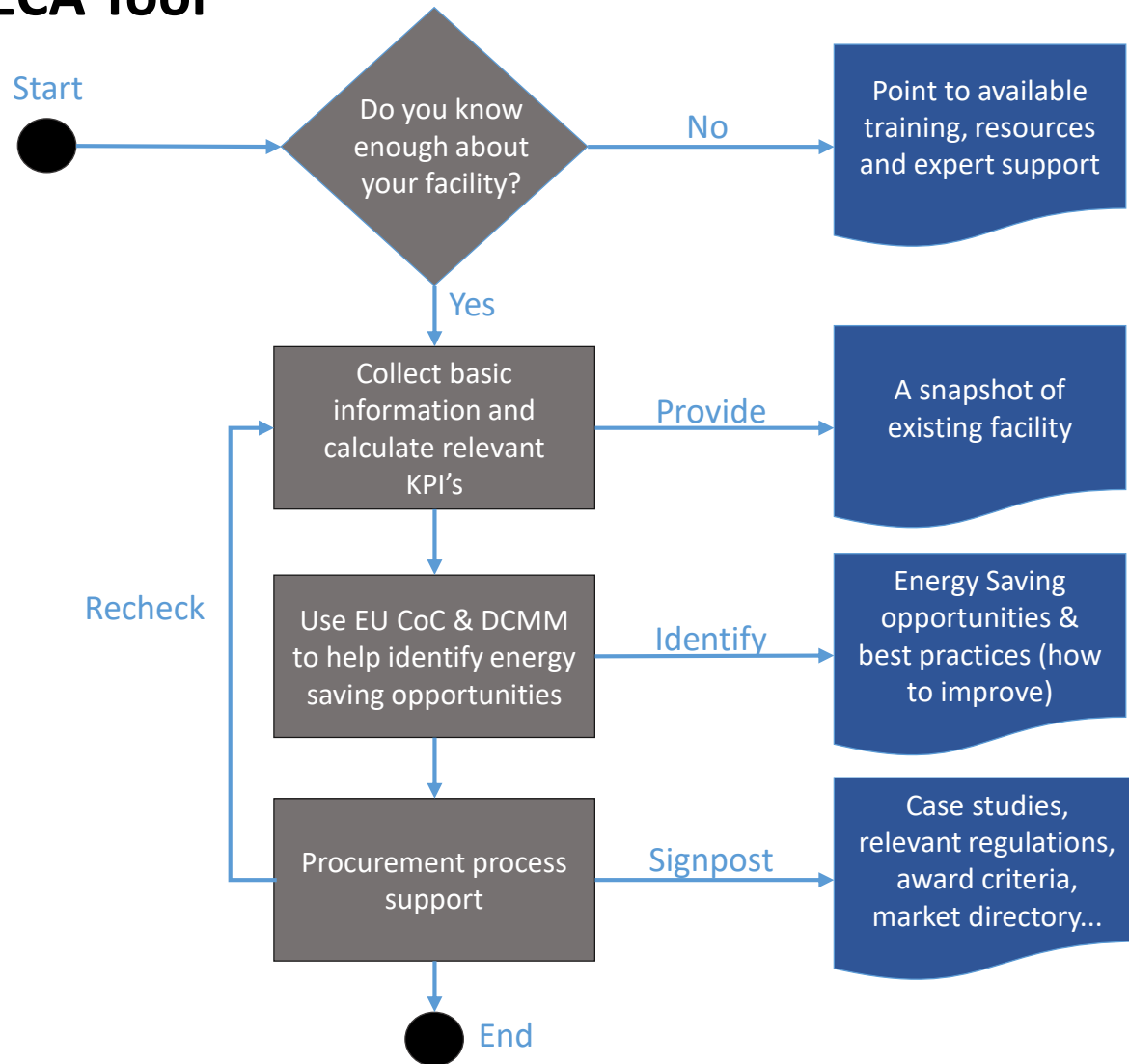- Create training curriculum and knowledge sharing events

Energy in data center procurement

Approach

- Lack of technical expertise
    - EURECA Tool, training programmes
- Complexity and Legal Uncertainty
    - Templates, case studies, knowledge sharing
- Insufficient Priority
    - Awareness and policy recommendations
- Stakeholder oriented support
    - Procurers, Decision Makers, ICT Managers, and Policy Makers

Energy in data center procurement

The EURECA Tool

Start

Do you know enough about your facility?

No → Point to available training, resources and expert support

Yes

Collect basic information and calculate relevant KPI's

Provide → A snapshot of existing facility

Use EU CoC & DCMM to help identify energy saving opportunities

Identify → Energy Saving opportunities & best practices (how to improve)

Procurement process support

Signpost → Case studies, relevant regulations, award criteria, market directory...

Recheck

End

Energy in data center procurement

The EURECA Tool

- Web platform : https://tool.dceureca.eu

- Uses standards and best practices to assess energy efficiency of data center and to provide improvement recommendations
  - DCMM : Data center maturity model
  - EU Code of Conduct for Energy Efficiency in Data Centers

- Partners expertise in mapping DCMM assessment model to EU CoC recommendations

	Level	0	1	2	3	4	5
Power							
1,1	Critical Power Path Efficiency - Building Entrance to IT load			3.3.4	3.3.3		
1,2	Architecture		6.1.3	3.3.4	3.3.3		
1,2	Architecture				6.1.1		
1,2	Architecture				6.1.2		

Energy in data center procurement
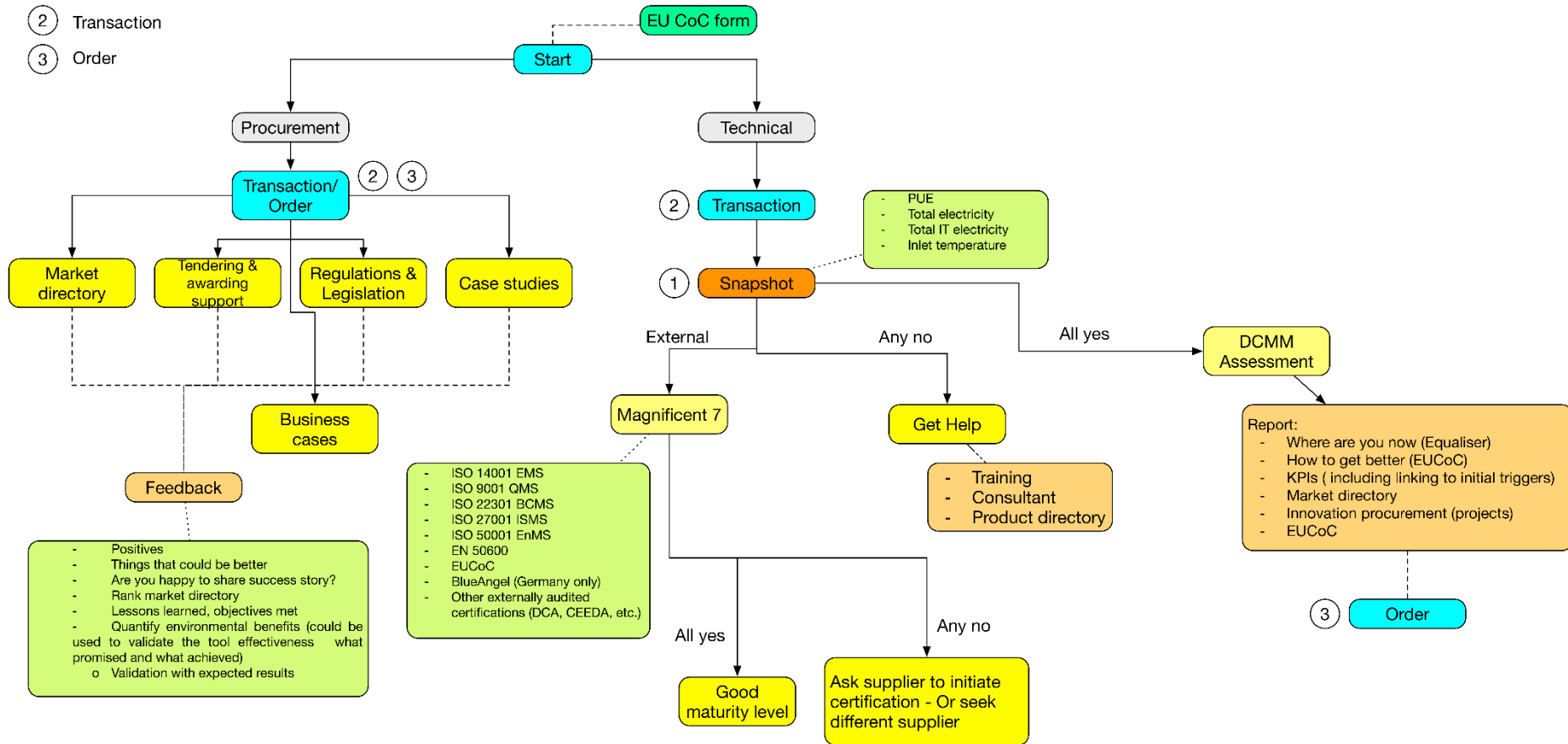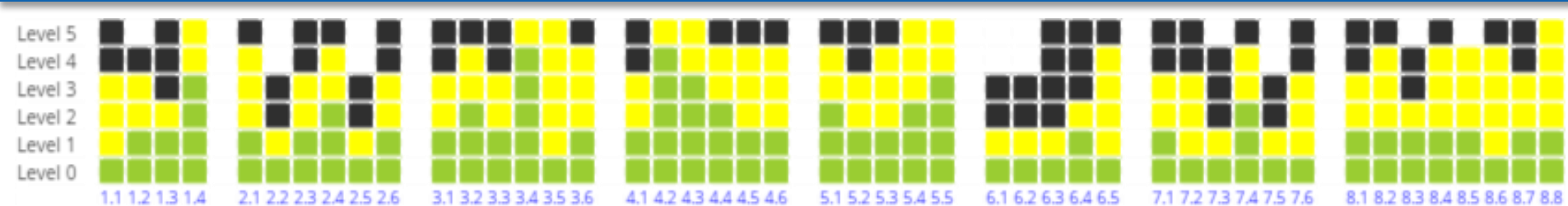
Energy in data center procurement

DCMM

- Model to benchmark and determine the level of maturity of the energy efficiency and sustainability of data centers
- Six levels of maturity from 0 to 5 by areas

EU CoC

- List of best practices in energy efficiency and sustainability in data centers
- For different areas, ranging from physical building, cabinets, IT equipment, software, operating system or business practices (and more)

Energy in data center procurement

Level 5
Level 4
Level 3
Level 2
Level 1
Level 0

1.1 1.2 1.3 1.4   2.1 2.2 2.3 2.4 2.5 2.6   3.1 3.2 3.3 3.4 3.5 3.6   4.1 4.2 4.3 4.4 4.5 4.6   5.1 5.2 5.3 5.4 5.5   6.1 6.2 6.3 6.4 6.5   7.1 7.2 7.3 7.4 7.5 7.6   8.1 8.2 8.3 8.4 8.5 8.6 8.7 8.8

eureca

- Demo Account ⌄
- Dashboard
- DC Sites
- Reports
- Orders
- Energy Comparison
- Energy Calculator

Report Of Technology Data Centre
Demo site   22 mai 2018

Report   DCMM Equaliser   **Recommended Actions**   DC Site Details   Triggers

3.1.1 - Group involvement
Establish an approval board containing representatives from all disciplines (software, IT, M&E, procurement). Requ
the impacts of the decision have been properly understood and an effective solution reached. For example, th
considering the M&E implications of different types of hardware. This group could be seen as the functional equival

3.2.1 - Consider the embodied environmental impact of installed devices
Carry out an audit of existing equipment to maximise any unused existing capability by ensuring that all areas of
material investment. The most important element to this in terms of impact is the IT equipment. The severity of imp

3.3.1 - Build resilience to business requirements
Only the level of resilience and therefore availability actually justified by business requirements and impact analysis
infrastructures are frequently unnecessary and inappropriate. If only a single level of resilience is available in the da
be obtained by splitting the IT platform across multiple sites and making applications resilient to the loss of an indiv

3.3.2 - Consider multiple levels of resilience
It is possible to build a single data centre to provide multiple levels of power and cooling resilience to different fl
optional 'grey' power feeds without UPS or generator back up.

Energy in data center procurement

Training curriculum

- Procurement
    - PPI for Public Sector Procurers and ICT Managers
    - Business Case Development
    - Legislation and Policies
    - Procurement Strategy
    - Tendering
    - Data Centre Contracts and Risks
- Technical
    - Data Centre KPIs and Standards
    - The EU Code of Conduct for Energy Efficiency in Data Centres
    - The Data Centre Maturity Model

Events

- Dozens of events and workshops across the EU to present the project, tool, and provide opportunities for knowledge sharing and training

Summary of the EURECA Project

- Project from March 2015 to February 2018

- H2020 project with 1 university and 7 industrial partners

- My participation as a research fellow from September 2015 to December 2016

- Website : https://www.dceureca.eu/

- Contact the coordinator for more info about the project :

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- Contact me :

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