DATA CENTRES. - NEARLY ZERO ENERGY CONSUMPTION
DC4Cities

EUROPEAN SUSTAINABLE WEEK
21ST JUNE 2017

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DC4Cities
DC4Cities Origins

Virtual Machine Dynamic Consolidation and Turn off Servers

Green Service Level Agreements

Adapt to Renewable Energy Availability

Jan 2010- Jun 2012

Nov 2011- Apr 2014

Sep 2013 - Feb 2016

EUSEW 2017
DC4Cities Concept

DC4Cities: let DCs become energy adaptive

EUSEW 2017
DC4Cities High Level View

- Grid/Smart Grid
- Renewable Energy Providers
- Smart City Control

Renewable Energy Adaptive Interface

Data Centre Energy Controller

Energy Adaptive Data Centre Operation Interface

User and Admin Task Scheduling

Infrastructure Mgmt

Energy Adaptive SW

EUSEW 2017
DC4Cities Overview (North)

Grid/Smart Grid

Renewable Energy Providers

Smart City Control

Energy Availability Forecast

Weather Forecast

RenPct

PV power

Renewable Energy Adaptive Interface

Data Centre Energy Controller

EUSEW 2017
DC4Cities Overview (Control)

Renewable Energy Adaptive Interface

Data Centre Energy Controller

DC Ideal power

Quota B

Quota A

Quota C

Service Quota FLEX Split Policies

Energy Adaptive Data Centre Operation Interface

EUSEW 2017
Trials Barcelona – CSUC Main results

CSUC Day

RenPercent +52%

APC=0.97

Consumption

CO2 Emissions

Cost

Primary Energy

EUSEW 2017
Accomplishment of the SLA in both activities

Day 1

Video Transcoding

Web Crawling & Indexing

EUSEW 2017
DC4Cities Exploitation

Usage as broker

Consultancy services and use of tools

Open Source contribution (Cloud Foundry, OpenStack, OpenNebula) and Training
Thanks

ANY QUESTION?

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