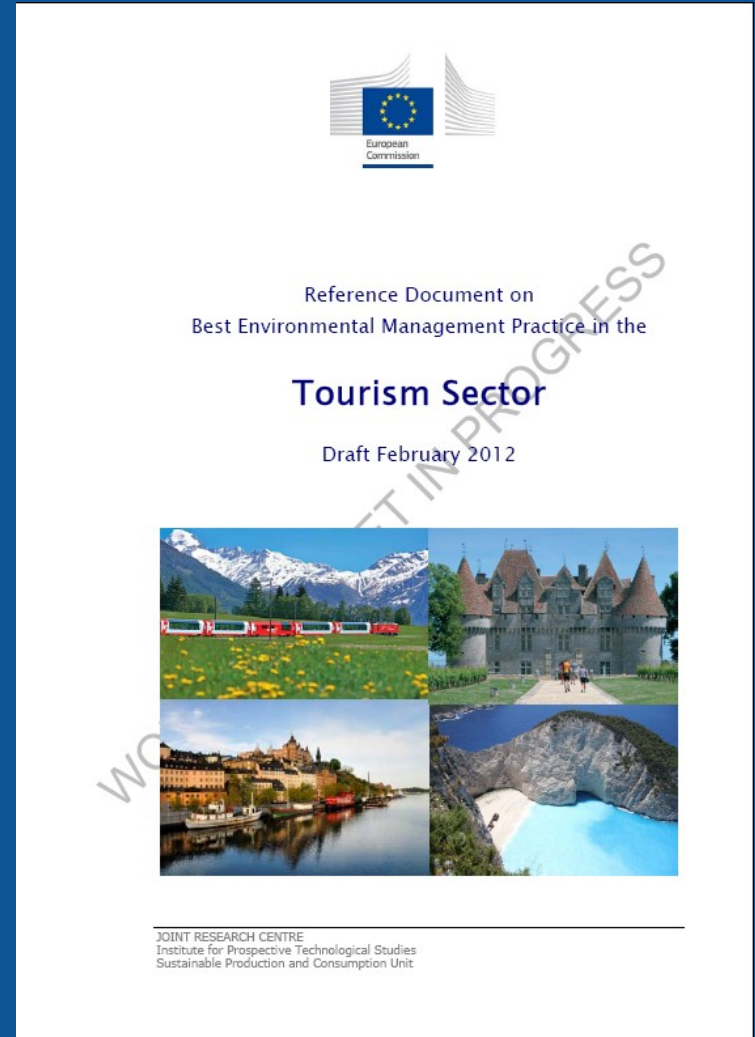


# ***Environmental performance & benchmarking in the tourism sector: technologies, best practices and indicators***

**David Styles, Harald  
Schoenberger, José Luis Galvez  
(Sustainable Production and  
Consumption Unit, JRC-IPTS)**



# Tourism environmental impacts

Tourism contribution to global pressures is relatively small (e.g. < 1% global water consumption, 5% global GHG emissions), but...

...leads to high local pressure, especially on biodiversity and water stress (left), often in HNV areas.



Also, current energy consumption intensity and trajectory of aviation GHG emissions unsustainable.

# Smart, sustainable tourism

- Tourism depends on natural resources, especially in high nature value areas
- Overdevelopment, climate change and resource depletion are major challenges for tourism
- Resource efficiency leads to cost efficiency
- Therefore, more sustainable tourism = smarter tourism
- And, smart destinations can facilitate this transformation

# EMAS Regulation (EMAS III)

REGULATION **(EC) No 1221/2009** of the  
European Parliament and of the Council  
of 25 November 2009

on the voluntary participation by organizations  
in a **Community Eco-Management and Audit  
Scheme (**EMAS**)** went into force in January  
2010

# EMAS Regulation (EMAS III)

## Article 46(1)

### Development of reference documents and guides

1. The Commission shall, in consultation with Member States and other stakeholders, develop **sectoral reference documents** that shall include:
  - a) **best environmental management practice**
  - b) environmental performance **indicators for specific sectors**
  - c) where appropriate, **benchmarks of excellence** and rating systems identifying performance levels.

# Sectoral reference documents (SRDs)

**Recital 19 of EMAS regulation:** "...Those documents should help organisations better focus on the **most important environmental aspects** in a given sector"

## > Conclusions

EMAS Sectoral Reference Documents shall:

### > process level

- consider **important indirect aspects**
- be useful for **all enterprises** (not only for the "EMAS world")

# Process level best practice descriptions

- Description
- Achieved environmental benefit
- Environmental indicators
- Cross-media effects
- Operational data
- Applicability
- Economics
- Driving force for implementation
- Reference organisations
- Reference literature

**Standard format**

**> 36 key processes described in SRD**

# Information exchange

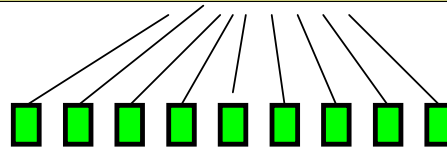


EMAS Article 49 Committee

management, planning,  
co-ordination, control

progress reports,  
draft Ref Docs

JRC/IPTS Sust. Prod. and Cons. Unit



Working Groups for the different sectors

Member States

Techniques  
providers

**ClubEMAS**

association of **EMAS**-registered  
organisations in Catalonia



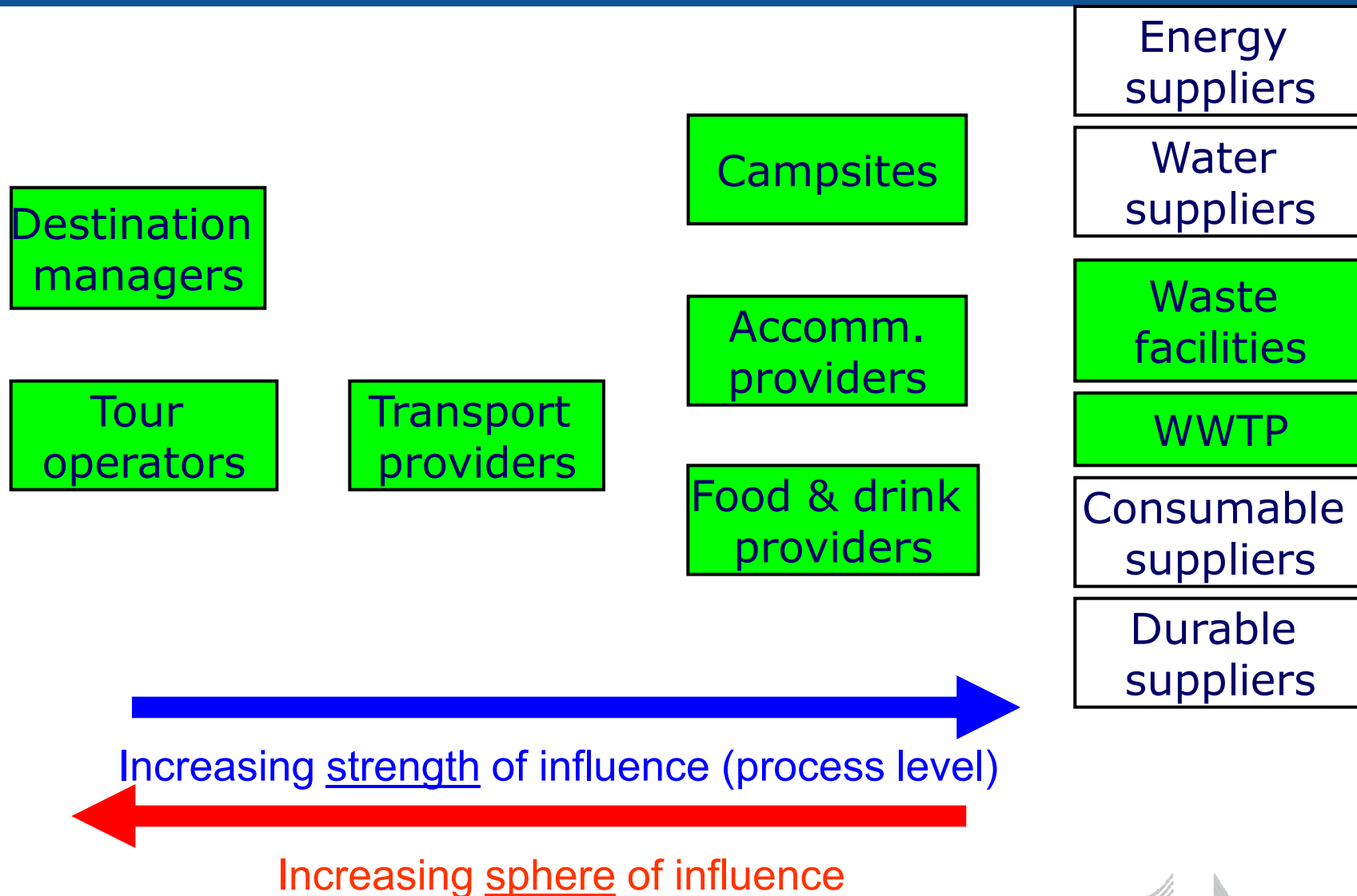
Research  
centres/institutes

enviro. NGOs

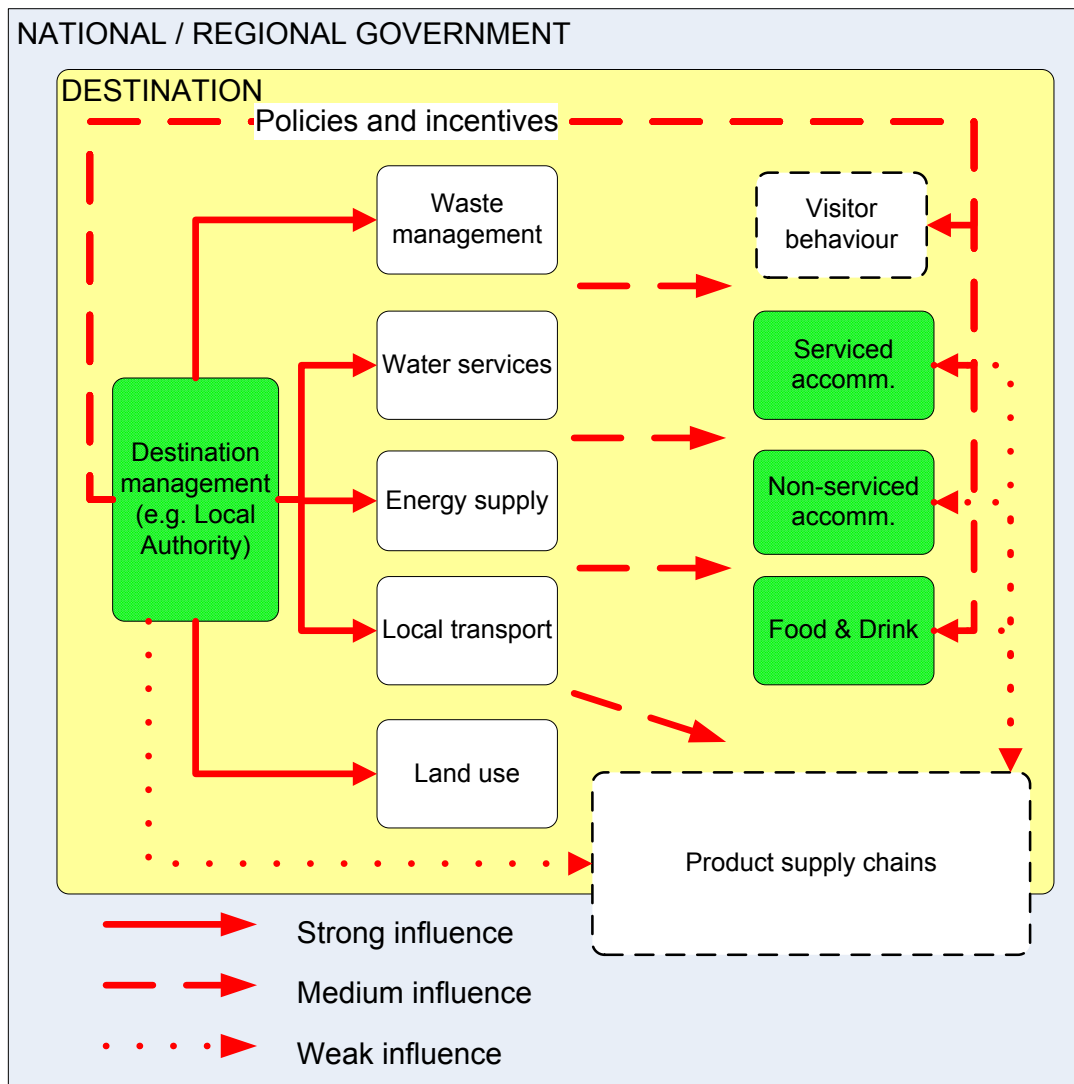




# Target tourism actors



# Strategic actors (destination managers)



Regulation,  
planning,  
incentives, best  
practice  
facilitation (e.g.  
guidance, low  
interest loans),  
environmental  
infrastructure  
provision...

Possible users and  
disseminators of SRD

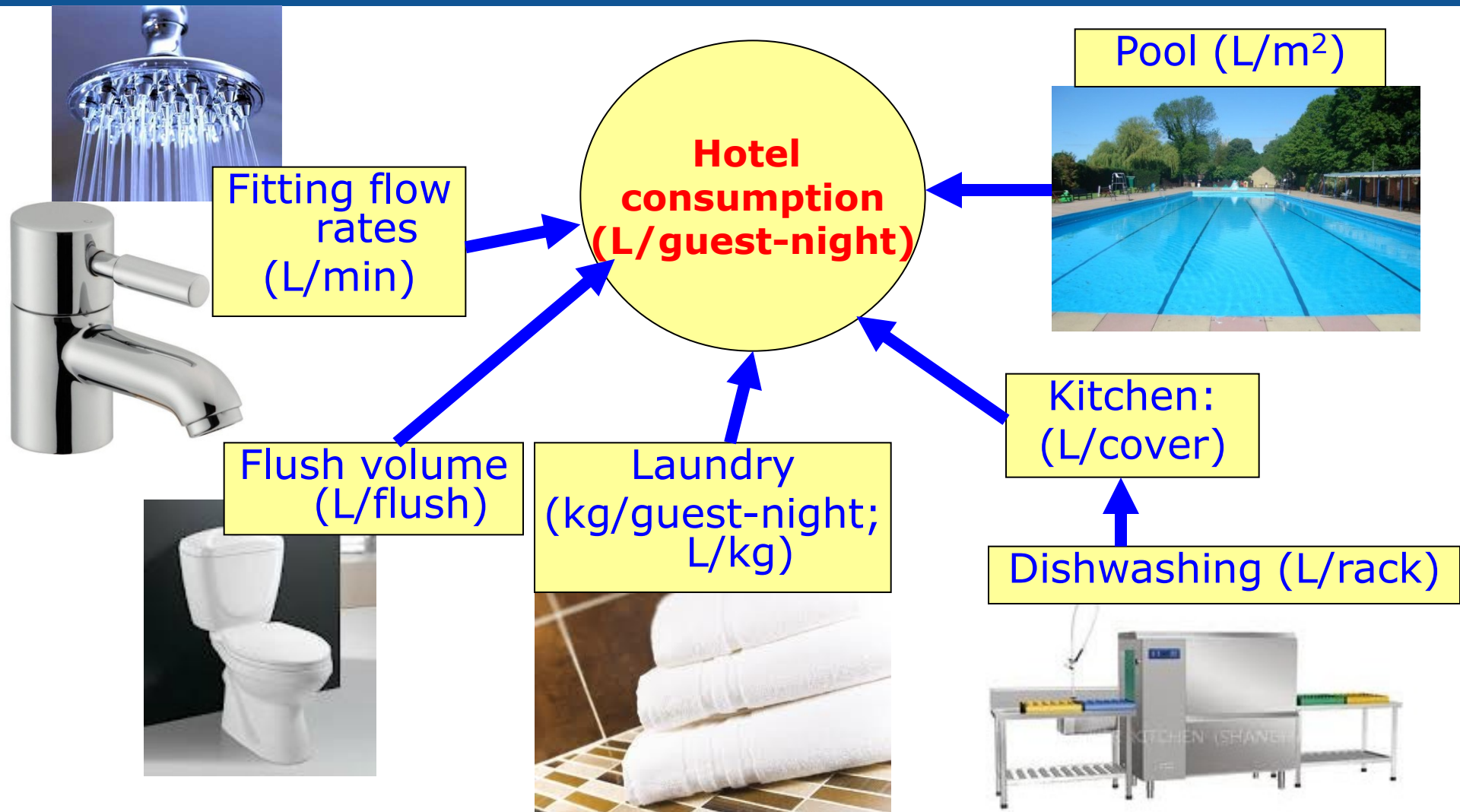
# Indicators and benchmarks: description

An **Environmental Performance Indicator** is a specific measure of environmental performance comparable at the process, site and/or organisation level.

A **Benchmark of Excellence** is the indicator value achieved by commercial best performers, under certain applicability and economic conditions

- at process level, based on best available technology and empirical data;
- at site/organisation level, based on empirical data.

# Indicators and benchmarks: water e.g.



# Process level benchmarks: water e.g.

- shower flow rate  $\leq 7$  L/min, bathroom tap flow rate  $\leq 6$  L/min ( $\leq 4$  L/min new taps), average effective toilet flush  $\leq 4.5$  L, installation of waterless urinals;
- reduction in laundry achieved through reuse of towels and bedclothes of at least 30 %;
- all new domestic washing machines have an EU energy label rating of "A+++", or average annual laundry water consumption  $\leq 7$  L per kg laundry washed in laundries with commercial machines;

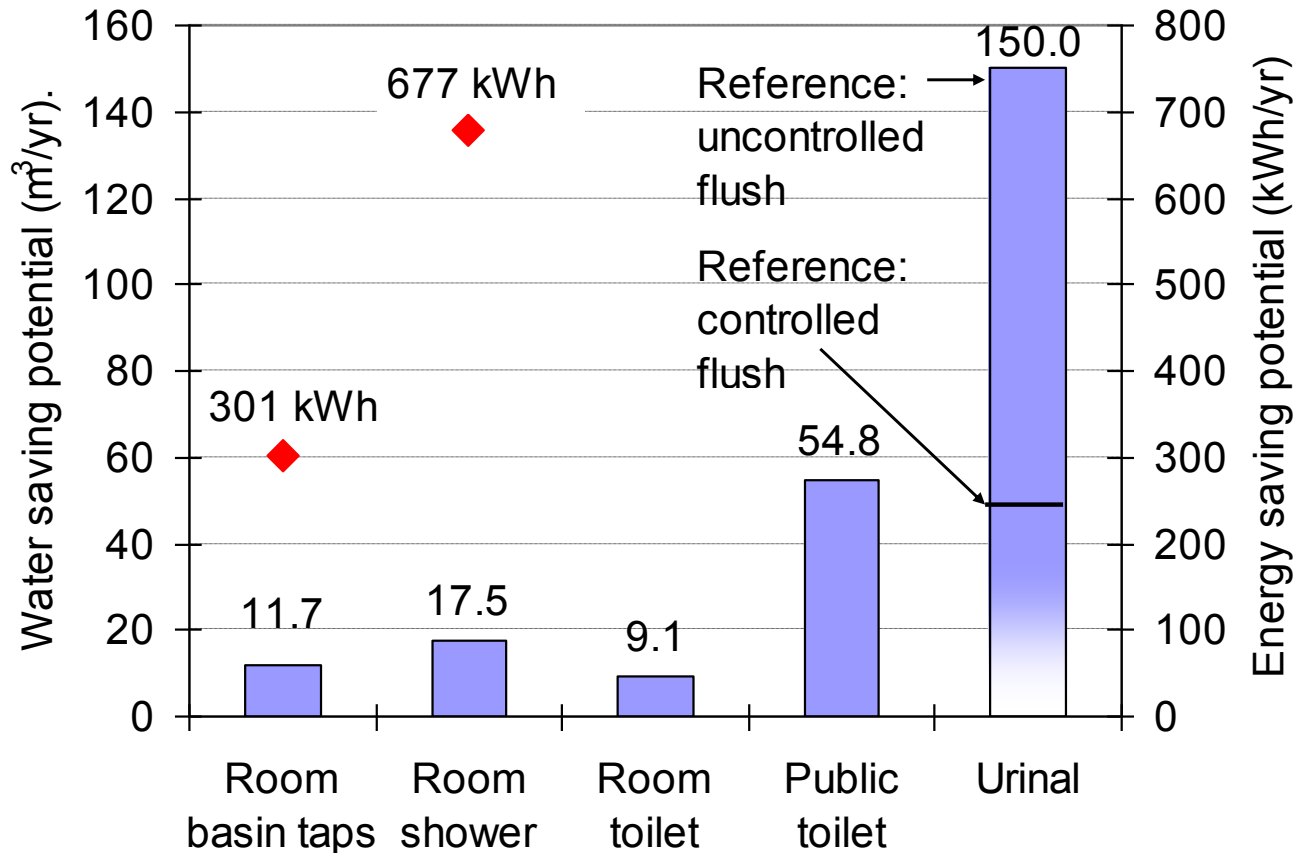
**Qualitative where no data**

# Enterprise level benchmarks: water e.g.



BM: total water consumption  $\leq 140$  L per guest-night in fully serviced hotels, and  $\leq 100$  L per guest-night in accommodation where the majority of bathrooms are shared across rooms (e.g. hostels)

# Environmental benefits: water e.g.



Benchmark compared with median (for a good hotel chain):

1850 m<sup>3</sup> per year saving (100-room hotel, 80% occupancy)

N.B.: Assumes five toilet flushes (includes cleaning flush), six minute shower and six minutes use of basin taps per guest-night (includes two minutes cleaning use), 80% occupancy (of which 25 % double occupancy), 30 flushes per day for public toilets

# Economic payback periods: water e.g.

Fitting	Fitting cost	Saving			Payback
		Water	Heating (oil)*	Total	
	EUR		EUR/yr		Months
Low-flow basin taps**	100-200 <sup>1</sup>	29	24	53	23-45
Combined flow-restrictor and aerator	10 <sup>2</sup>	22	18	40	3

**Price premium for efficient fittings much lower than fitting cost – payback short if integrated with retrofit**

Shower push-button timer	150-200 <sup>4</sup>	164	203	367	5-7
Low-flush toilet** (rooms)	70-150 <sup>5</sup>	23		14	36-78
Cistern displacement/dual-flush retrofit (bathroom)	20 <sup>6</sup>	23		14	10
Low-flush toilet (public)**	150 <sup>5</sup>	137		137	13
Bathroom cistern displacement /dual-flush retrofit (public)	20 <sup>6</sup>	137		137	2
Urinal flush control (ref. uncontrolled)	200 <sup>7</sup>	375		375	7
Waterless urinal (ref uncontrolled)	150 <sup>8</sup>	375		375	5



# Other aspects

Previous slides focused on water consumption in accommodation (one chapter in SRD).

Other chapters cover energy consumption and waste management in accommodation, best practice by tour operators (e.g. to reduce transport impacts), best practice by destination managers (e.g. to protect biodiversity), best practice in kitchens, best practice on campsites, and cross-cutting best practice (e.g. use of process-level performance indicators)

# SRD progress

Second draft can be downloaded from:

<http://susproc.jrc.ec.europa.eu/activities/emas/tourism.html>

Final draft due end of May



# Contact details



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