Overview of Measurement Efforts in the field of Energy Management by INSTO Members

18 May 2023

UNWTO
World Tourism Organization

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Overview INSTO Members (37)

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37	OBSERVATORIES
14	ASIA AND THE PACIFIC
1	Australia
8	China
5	Indonesia
11	AMERICAS
1	Argentina
2	Brazil
2	Canada
1	Guatemala
3	Mexico
1	Colombia
1	USA
12	EUROPE
1	Croatia
1	Greece
1	Italy
3	Portugal
6	Spain

INSTO Webinar Series

VISION

Fostering a dynamic network of partners that strives towards creating healthy places for both visitors and the host communities while leaving resilient destinations to future generations.

TOOLS AND RESOURCES

A repository of tools and resources on the 11 mandatory issue areas that INSTO Observatories are required to monitor

TOOLS AND RESOURCES →

WEBINARS

TECHNICAL INSTO WEBINARS →
INSTO INSIGHTS WEBINARS →

https://www.unwto.org/sustainable-development/unwto-international-network-of-sustainable-tourism-observatories

ALL REGIONS | INSTO | TECHNICAL INSTO WEBINARS

Technical INSTO Webinar on Energy Management

12 MAY 2022

ALL REGIONS | INSTO | TECHNICAL INSTO WEBINARS

Technical INSTO Webinar on Economic Benefits

13 APR 2022

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Technical INSTO Webinar on Solid Waste Management

11 MAR 2022

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Technical INSTO Webinar on: Employment

ALL REGIONS | INSTO | TECHNICAL INSTO WEBINARS

2021 Global Virtual INSTO Meeting on Governance

ALL REGIONS | INSTO | TECHNICAL INSTO WEBINARS

Technical INSTO Webinar on: Climate Action

INSTO Webinar on Energy Management 2022

TECHNICAL PRESENTATION	**International Renewable Energy Agency (IRENA)** *Mr. Adrian Whiteman*, Consultant-Energy Statistics of Knowledge, Policy and Finance Centre (KPFC) **See Presentation** **See Video**
PRESENTATION BY INSTO MEMBER	**Sustainable Tourism Observatory of South Tyrol (STOST), Italy** *Prof. Dr. Anna Scuttari*, Project Manager, Senior Researcher at the Center for Advanced Studies, Eurac Research **See Presentation** **See Video**
	Sustainable Tourism Observatory of Malaga, Spain *Mr. Alfonso Palacios*, Industrial Engineer and Project Manager, Department for Urban Innovation and Digitalisation, Malaga City Council **See Presentation** **See Video**
	The Yukon Sustainable Tourism Observatory, Canada *Ms. Lisa Christensen*, Sustainable Tourism Research Analyst, Department of Tourism and Culture, Tourism Branch, Government of Yukon **See Presentation** **See Video**

Repository of Tools and Resources

https://www.unwto.org/sustainable-development/unwto-international-network-of-sustainable-tourism-observatories

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A Repository of Tools and Resources

on the 11 mandatory issue areas that INSTO Observatories are required to monitor

Energy Management

PUBLICATIONS

Energy Management, Excerpt from *Indicators of sustainable development of tourism destinations, A Guidebook*, World Tourism Organization (2004), pp. 152–155.

Energy Management (Climate Change and Tourism), Excerpt from *Indicators of sustainable development of tourism destinations, A Guidebook*, World Tourism Organization (2004), pp. 155–164.

Energy Management (Tourism-related Transport), Excerpt from *Indicators of sustainable development of tourism destinations, A Guidebook*, World Tourism Organization (2004), pp. 210–219.

Energy Management (Air Transport), Excerpt from *Indicators of sustainable development of tourism destinations, A Guidebook*, World Tourism Organization (2004), pp. 219–222.

Resource Efficiency, *Making tourism more sustainable, A guide for policy makers*, World Tourism Organization (2005), pp. 44–46.

SCP Related Impact Areas, *Baseline Report on the Integration of Sustainable Consumption and Production Patterns into Tourism Policies*, World Tourism Organization, United Nations Environment (2019), p. 19.

Energy as a Service - Innovation Landscape Brief, International Renewable Energy Agency (IRENA) (2020).

Renewable Energy Opportunities for Island Tourism, International Renewable Energy Agency (IRENA) (2014).

Energy, Tourism and COVID-19, An Analysis of Energy Consumption Trends in EU Islands during the Pandemic, Joint Research Centre (JRC), European Commission, (2022).

PRESENTATIONS

Smart Mobility - The Future of Transportation, Discussion at the Second UNWTO World Conference on Smart Destinations (06/2018).

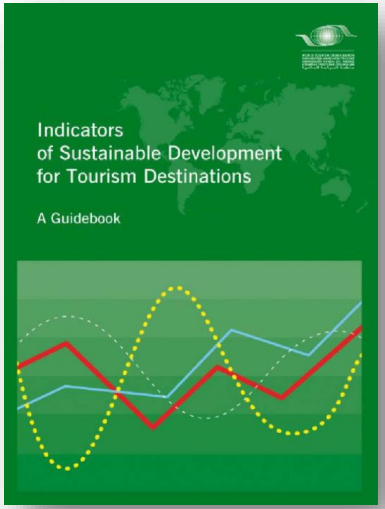
Grenada Capacity Building Programme for Energy Management and Energy Audits, SIDS Lighthouses Initiative, International Renewable Energy Agency (IRENA) (12/2021).

OTHER RESOURCES

Data and Statistics, International Renewable Energy Agency (IRENA).

Measuring the Sustainability of Tourism (MST), UNWTO

System of Environmental Economic Accounting (SEEA), United Nations



Components of the climate change issue: mitigation	Indicators
Greenhouse gas emissions by the destination and by the tourism component	• Total CO_2 produced due to the community's energy consumption; • Consumption of fossil fuels by the tourism sector (see also ➢ Energy p. 152).
Transportation fuel use	• Total consumption per capita of fossil fuels for transportation; • Total consumption of fossil fuels in the destination for tourist transportation (note also issue section on Transportation p. 210).
Energy consumption related to temperature control	• Number and % rooms with air conditioning and/or heating.
Coverage of natural areas	• % of natural area coverage in the territory of the destination (change over time).

Components of the issue	Indicators
Measuring energy use and conservation	• **Per capita consumption of energy from all sources (overall, and by tourist sector – per person day)** ➢ Baseline indicator Note: can also be used as derived indicator of energy use per resident relative to energy use per tourist.
Energy management programs	• **Percentage of businesses participating in energy conservation programs, or applying energy saving policy and techniques** ➢ Baseline indicator
Use of renewable energy sources	• **% of energy consumption from renewable resources (at destinations, establishments)** ➢ Baseline indicator; • Number, of % of establishments (e.g. hotels) using renewable sources, generating own energy (see Box 3.27 re energy sources).

Components of the Issue	Indicators
Environmental impacts of air travel	• Energy consumption (total consumption and consumption per passenger Km) (see ➢ Energy management p. 152); • Atmospheric pollution (total emission of greenhouse gases by airline/flight, emission per passenger km).
Impacts of airports and related infrastructure	• Land occupation (% of destination territory within airport boundary, % of territory altered); • % or number of access roads with severe traffic congestion (beyond design capacity or in state of failure); • Noise (area affected by noise around airports and runways); • Congestion: Number of hours spent by average tourist using airport .
Socio-economic concerns related to air travel	• Total public expenditure on airport infrastructure (as % of total destination budget, an per passenger); • Cost of safety and security measures (total and per passenger); • Number of employees to be trained in the air transport system per tourist; • Cost of skills and training for airport personnel; • % of annual costs (operations and capital) covered by revenues at airport from different sources.

Analysis of indicators used by Observatories

- Overview of available indicators from UNWTO, European Tourism Indicator System (ETIS), GSTC, OECD and others
- Applied indicators by INSTO members
- Data sources

Issue Areas (based on UNWTO Indicator Book)	Indicator Code	Proposed Indicators	ETIS (mandatory indicators are marked in bold;	GSTC (41 issue areas, 107 indicators)
Energy management				
	5.1	Per capita consumption of energy from all sources (overall, and by tourist sector - per person day)	Energy consumption per tourist night compared to general population energy consumption per person night D.6.1	
	5.2	% of energy consumption from renewable resources (at destinations, establishments)	Annual amount of energy consumed from renewable sources (Mwh) as a % of overall energy consumption D.6.1.2	
	5.3	Percentage of business participating in energy conservation programs or applying energy saving policy and techniques		
	5.4	Per capita consumption (total energy consumption (MJ) per annum / person years per annum)(also just for the tourism sector)		
	5.5	Consumption by source		
	5.6	Savings in energy expenses, use of renewable energy sources		D5.b. Policies and incentives to reduce reliance on fossil fuels, improve energy efficiency, and encourage the adoption and use of renewable energy technologies
			% of tourism enterprises that have switched to low-energy lighting D.1.1	
				D5.a. Program to promote energy conservation and measure, monitor, reduce, and publicly report energy consumption

- ✓ **New ones: e.g.**
  Electricity consumption by ski lifts and snow cannons
  Number of charging stations offered for e-mobility in accommodation facilities and public spaces

Energy Management Indicators Overview from INSTO Observatories

List of *Energy Management* indicators taken from Preliminary Reports and Annual Reports 2019- 2022

<u>Often used Indicator:</u>

Per capita consumption of energy from all sources (overall, and per tourist sector- per person day)

<u>Often used Indicator:</u>

%of energy consumption from renewable resources (at destinations, establishments)

Upcoming INSTO Events in 2023

INSTO INSIGHTS Webinar Key Issue Area	Tentative Dates
Local Satisfaction	Wednesday, 7 December 2022
Tourism Seasonality	Thursday, 26 January 2023
Water Management	Thursday, 23 February 2023
Economic benefits	Thursday, 16 March 2023
Solid Waste Management	Thursday, 8 June 2023
Energy Management	Thursday, 18 May 2023
Wastewater Management	Thursday, 22 June 2023
Accessibility	Thursday, 6 July 2023
Employment	Thursday, 14 September 2023
Annual INSTO Meeting 2023	Thursday and Friday, ~~19 – 20~~ October 9-10 November 2023
Climate Action	Thursday, 16 November 2023
Governance	Thursday, 7 December 2023

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THANK YOU!