9. Evaluation and EE Indicators

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9. Evaluation and EE Indicators

Trainer(s): John Dulac

Scenario: The national government wants to know how effective the energy efficiency programmes have been and wants to compare different cities.

Question: How do you develop indicators that properly measures the benefits of your programmes?

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Training Overview

1. **Why Evaluate?**
   - Determine impact, provide insight, determine value for money

10 mins

2. **Using indicators**
   - Value of indicators
   - Analyses that can be done (performance, demand, decomposition)
   - Examples of indicators in urban areas: IEA, ESMAP

15 mins

3. **Activity:** Telling the story

30 mins

4. **What are the steps?**
   - What needs to be tracked, define the indicators
   - Assess data and tell the story
   - Embedding evaluation in project planning

15 mins

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1. Why Evaluate?

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1. Why Evaluate?

Your peers in the Indicators and Evaluation course will specialise more on this topic. It is important to understand how you can use evaluation into your specialty in the urban environment

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1. Why Evaluate?

- Regulators
- NGOs and public

- Programme managers
- Partners

- Funders
- Treasury

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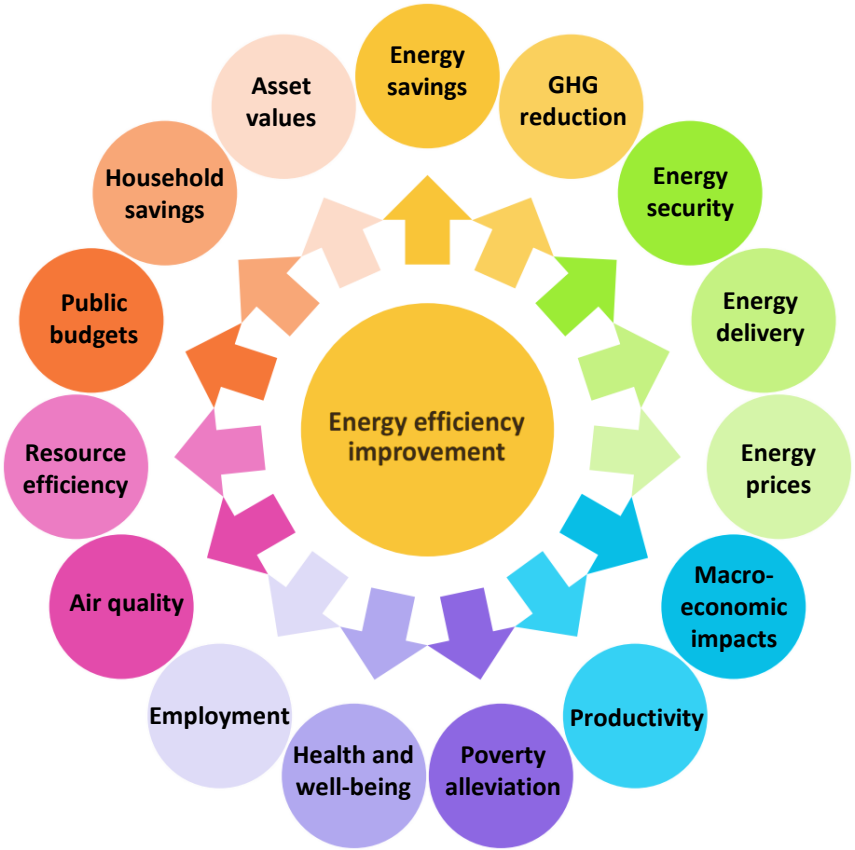
1. Why Evaluate?

Impact, what did we achieve?



Energy efficiency policies affect multiple aspects of society and the economy of interest to stakeholders

These are some of the multiple benefits or impacts that must be considered in evaluation

Are these impacts being considered in your evaluation reports?

IEA's Multiple Benefits Diagram
https://www.iea.org/publications/freepublications/publication/Multiple_Benefits_of_Energy_Efficiency.pdf

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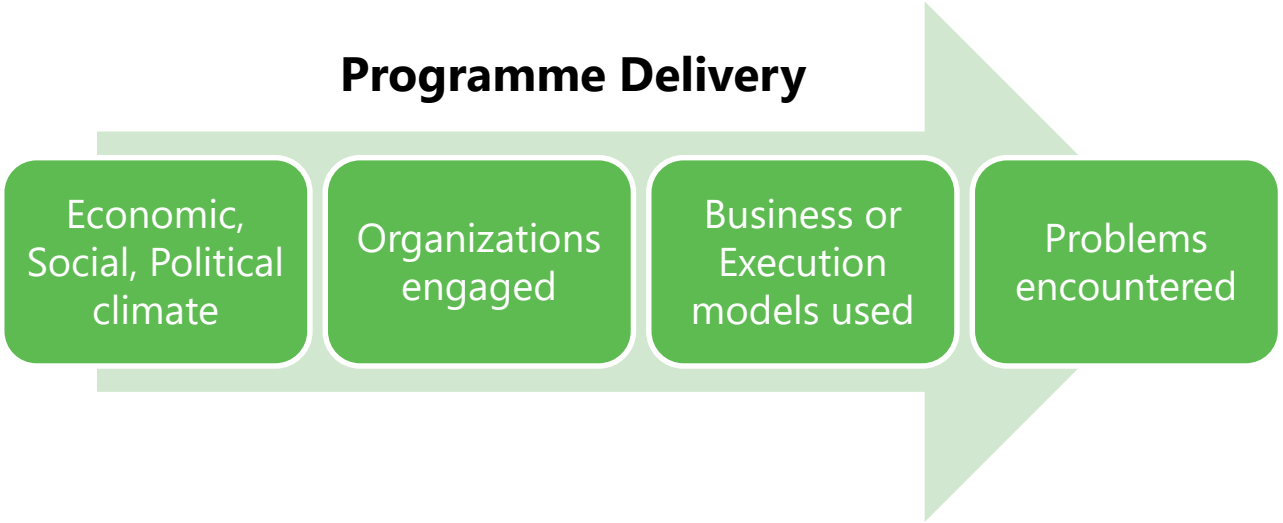
1. Why Evaluate?

Process, how did it go?

Evaluation also provides insight on how the programme was delivered



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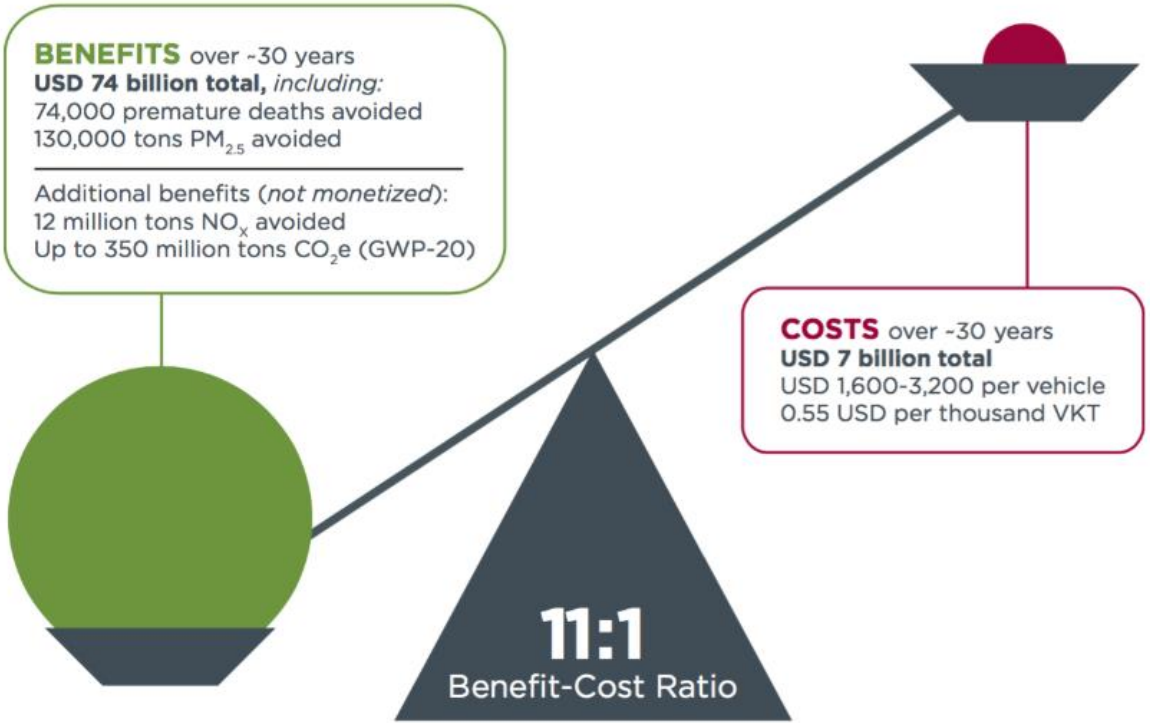
1. Why Evaluate?

Economic, did we get value for money?

Evaluation also provides metrics in comparing costs to benefits



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Source: https://www.theicct.org/publications/cost-benefit-analysis-brazils-heavy-duty-emission-standards-p-8

2. Using indicators

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2. **Using indicators.** Value of indicators

Target

- reinforces **the message of the targets**

Progress

- keeps **everyone aware of their progress** and whether they **are on-track** to meet the goals

Motivation

- reinforces **competition** and provides **evidence for stronger policies** when necessary

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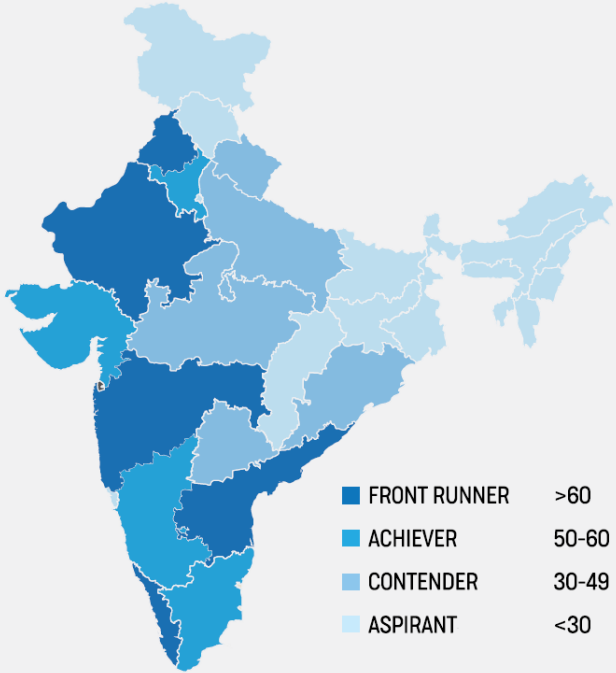
2. **Using indicators.** Value of indicators

- **For example:** AEEE's EE preparedness report



Source State-EE-Preparedness-Index-FINAL_July2018.pdf

Motivation

- reinforces **competition** and provides **evidence for stronger policies** when necessary

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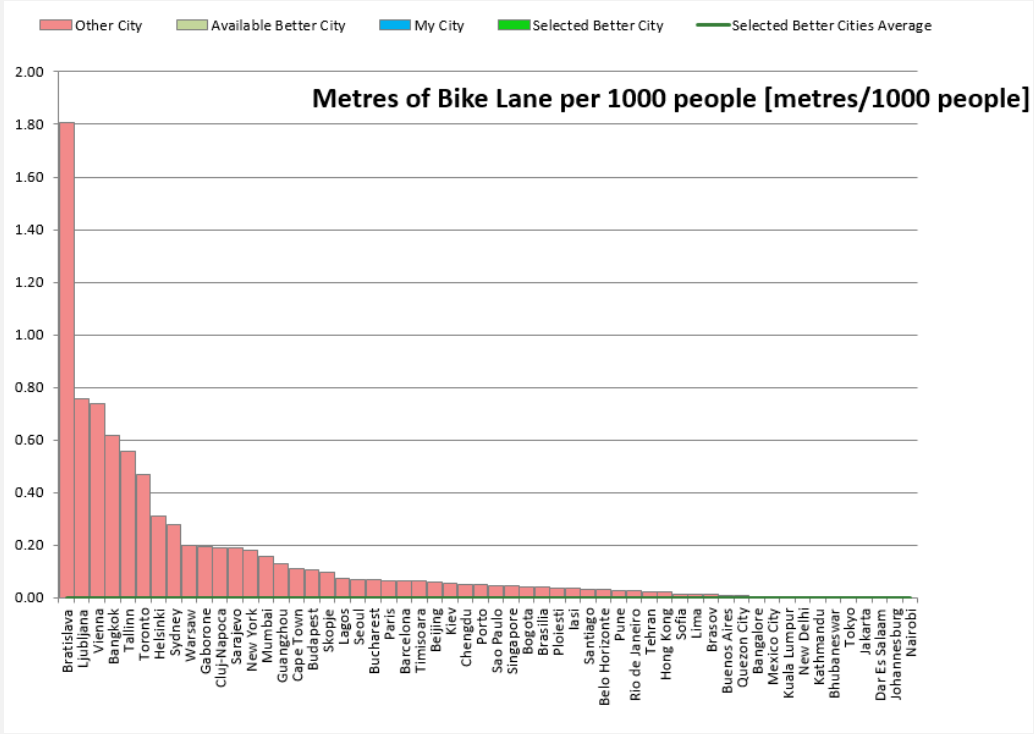
2. **Using indicators.** Value of indicators

- **For example:** ESMAP TRACE tool



Source ESMAP TRACE 2.0

Motivation

- reinforces **competition** and provides **evidence for stronger policies** when necessary

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2. **Using indicators.** Analyses that can be done

Performance Metrics

- Measures changes in energy intensities

Demand Analysis

- Analysing demands and projecting possible futures

Decomposition

- Break down energy use into individual factors to help determine where best to address future policy concerns.

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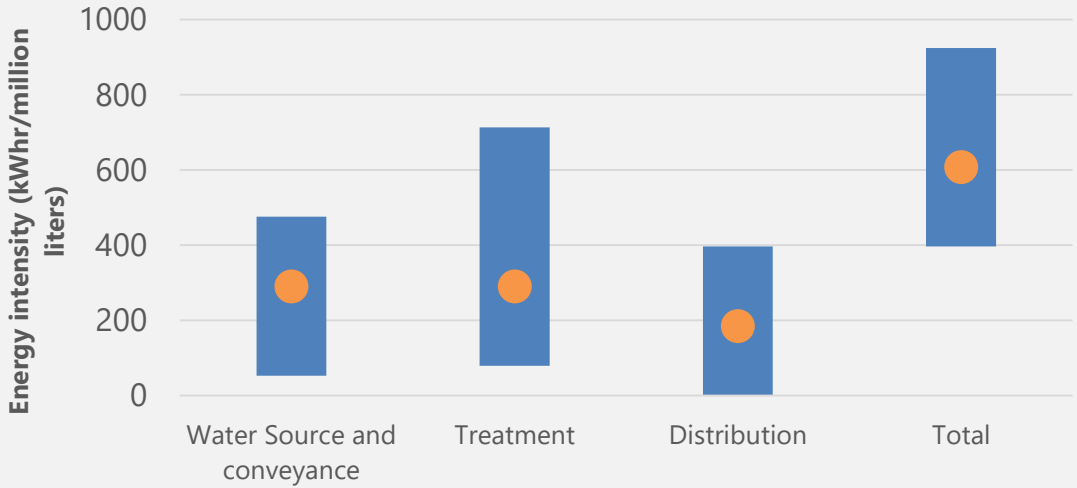
2. Using indicators. Analyses that can be done

Performance Metrics

- Measures changes in energy intensities
  - Main energy use divided by main driver
  - More aggregated, the better

- **Water Energy Intensity** kWhr/million liters



Source ACEEE Survey on Energy Use in Water

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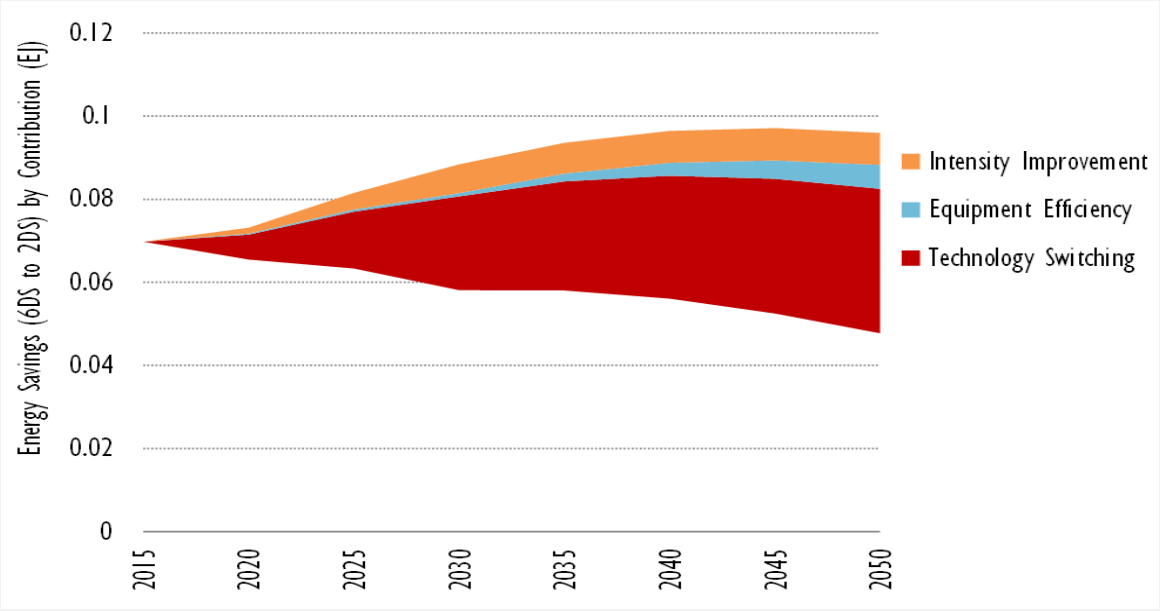
2. Using indicators. Analyses that can be done

Demand Analysis

- Analysing demands and projecting possible futures
  - Change each factor and see how they affect future trends

- **What-if analysis**: Proportional distribution of energy savings by holding only changing one indicator at a time



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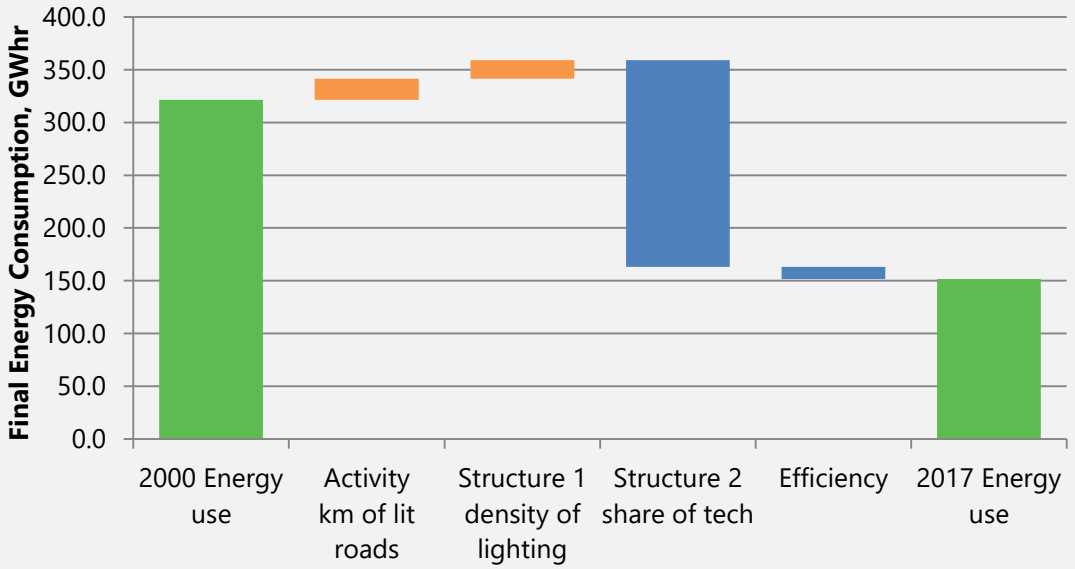
Source Energy Technology Perspectives

2. **Using indicators.** Analyses that can be done

Decomposition

- Break down energy use into individual factors to help determine where best to address future policy concerns.

- **Sample Municipality X**, street lighting performance



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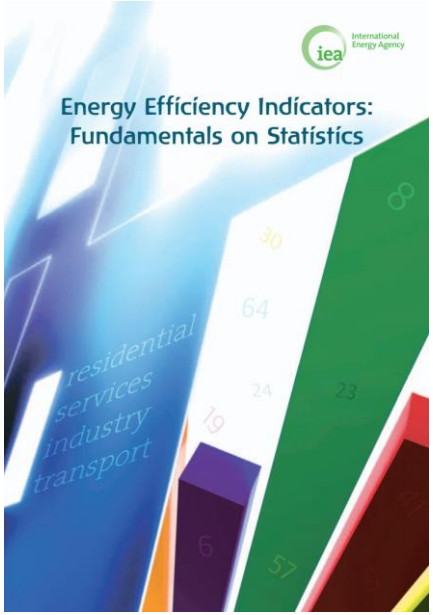
2. Using indicators. Example: IEA indicators

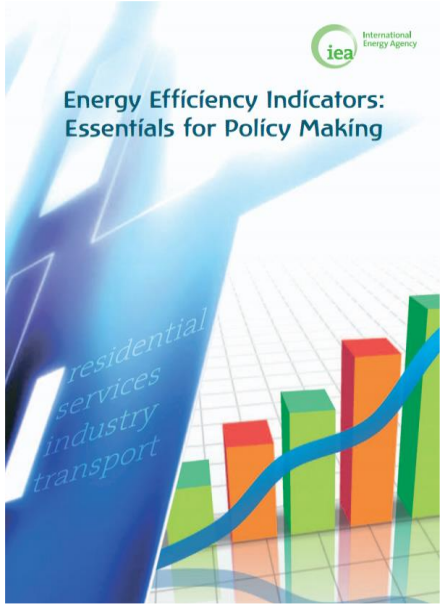
Where to start? | Tools | What are the steps?

Manuals on statistics



https://webstore.iea.org/energy-efficiency-indicators-fundamentals-on-statistics

Manuals on policymaking



https://webstore.iea.org/energy-efficiency-indicators-essentials-for-policy-making

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2. **Using indicators.** Example: IEA indicators

Online Course

Energy Efficiency Indicators: Essentials for Policy Making

International Energy Agency -

View Course

Energy Efficiency Indicators: Fundamentals on Statistics

International Energy Agency -

View Course

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2. Using indicators. Example: Worldbank

Where to start? | Tools | What are the steps?

Step 1 of 12. City KPIs and Data

Please provide details about your city in the Categories shown on the left.

ESMAP Energy Sector Management Assistance Program

THE WORLD BANK IBRD • IDA | WORLD BANK GROUP

8%

- Show All
- DETAILS
- CONTEXT
- PUBLIC TRANSPORTATION
- PRIVATE VEHICLES
- MUNICIPAL BUILDINGS
- COMMERCIAL BUILDINGS
- RESIDENTIAL BUILDINGS

Show KPI Definition

Double click on Year or Source to view or edit full details

KPI	Value	Units	Year	Source	Prox	keyKPI
Metres of High Capacity Transit		metres				
Metres of High Capacity Transit per 1000 People		metres/1000 people				
Transportation Non-Motorized Mode Split		%				
Public Transportation Mode Split		%				
Public Transport Energy Consumption per Passenger km		MJ/passenger km				Yes
Public Transport Energy		MJ				
Passenger Kilometers		km				
Meters of Bike Lanes		meters				
Metres of Bike Lane per 1000 people		metres/1000 people				

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3. Activity

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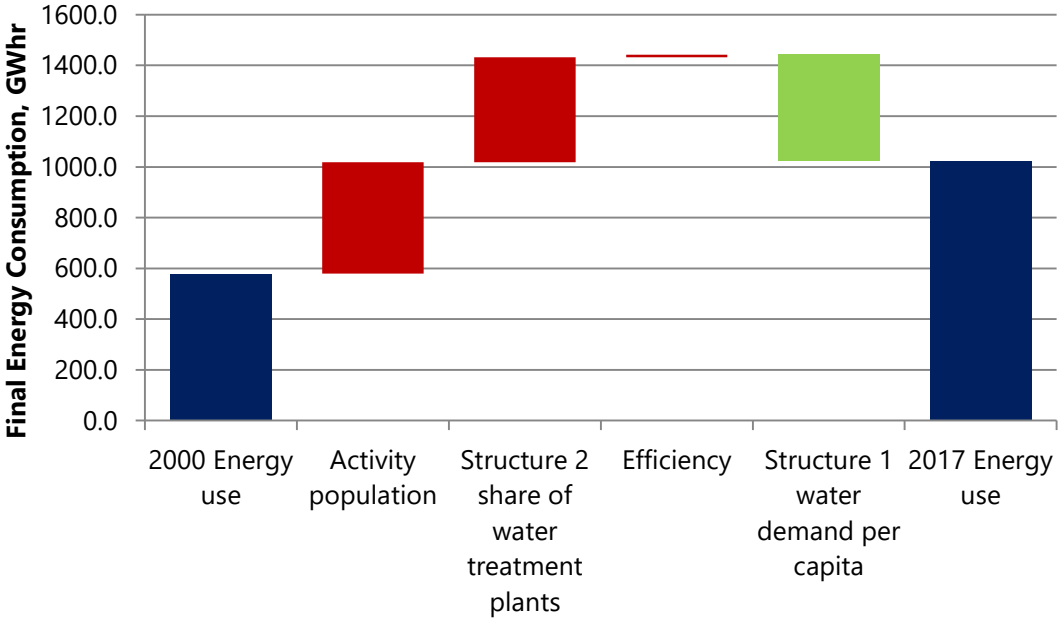
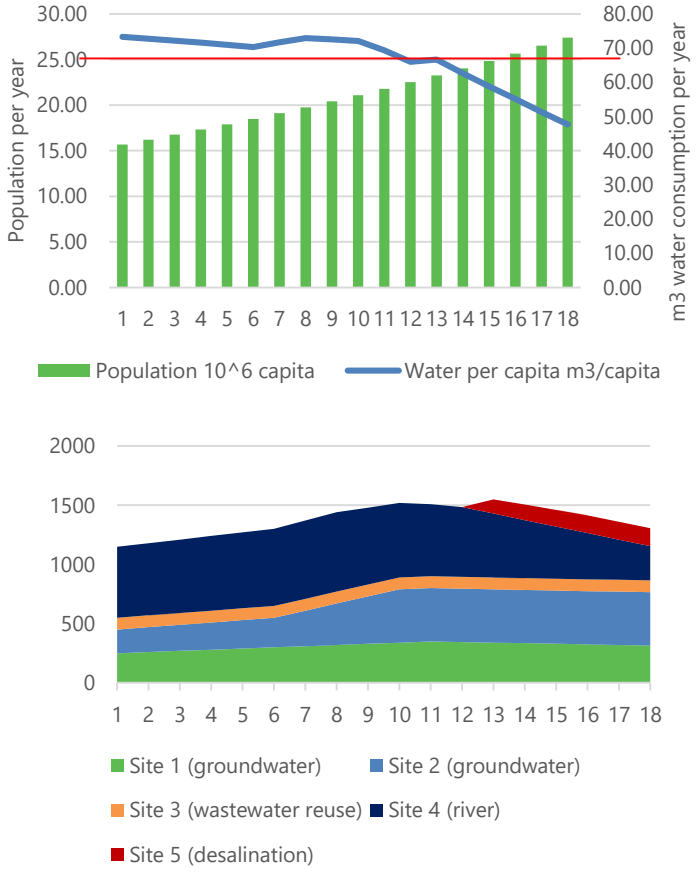
3. Activity

- What story can you tell about these figures?





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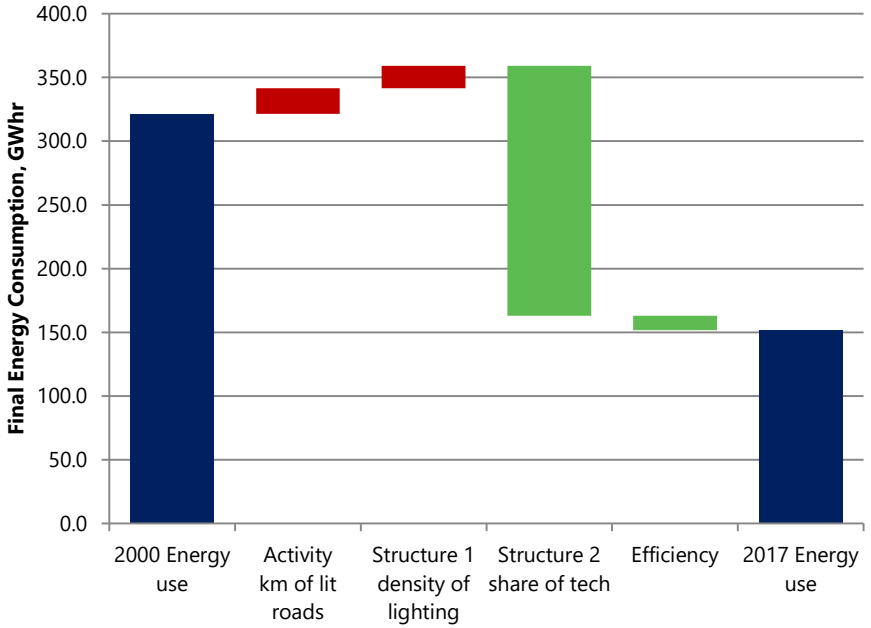
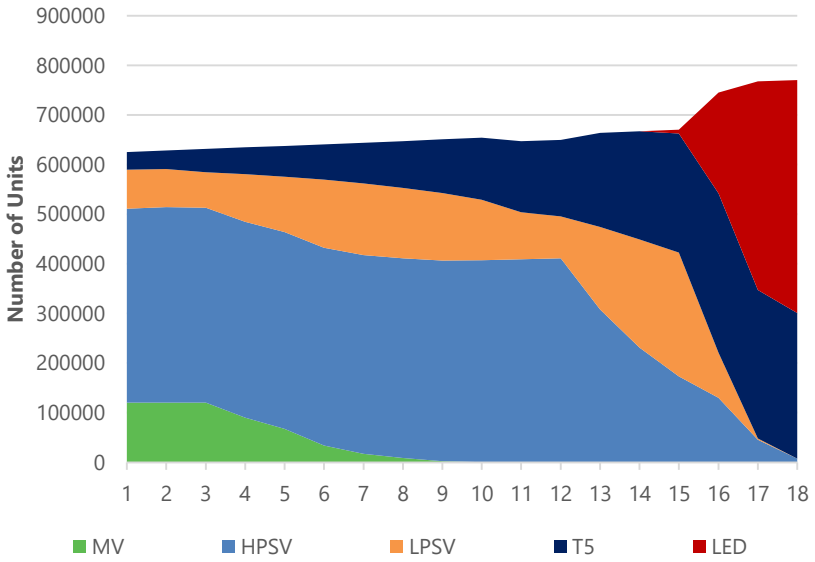
3. Activity

- What story can you tell about these figures?





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3. What are the steps?

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4. Steps in the process

Step 1: Identify what needs to be tracked

- *What story should be told?*
- *What were the objectives?*
- *What are the risks?*

Step 2: Define the tracking indicators

- *What performance metrics can you use?*
- *What data is needed?*

Step 3: Assess the data

- *What analysis method should you use?*

Step 4: Tell the story

- *How do you visualise the results?*
- *How would it vary across countries?*

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