# Why data matters for Energy Efficiency policies

Duncan Millard, Chief Statistician & Head of the Energy Data Centre, IEA

G20 Energy end use data and metrics workshop

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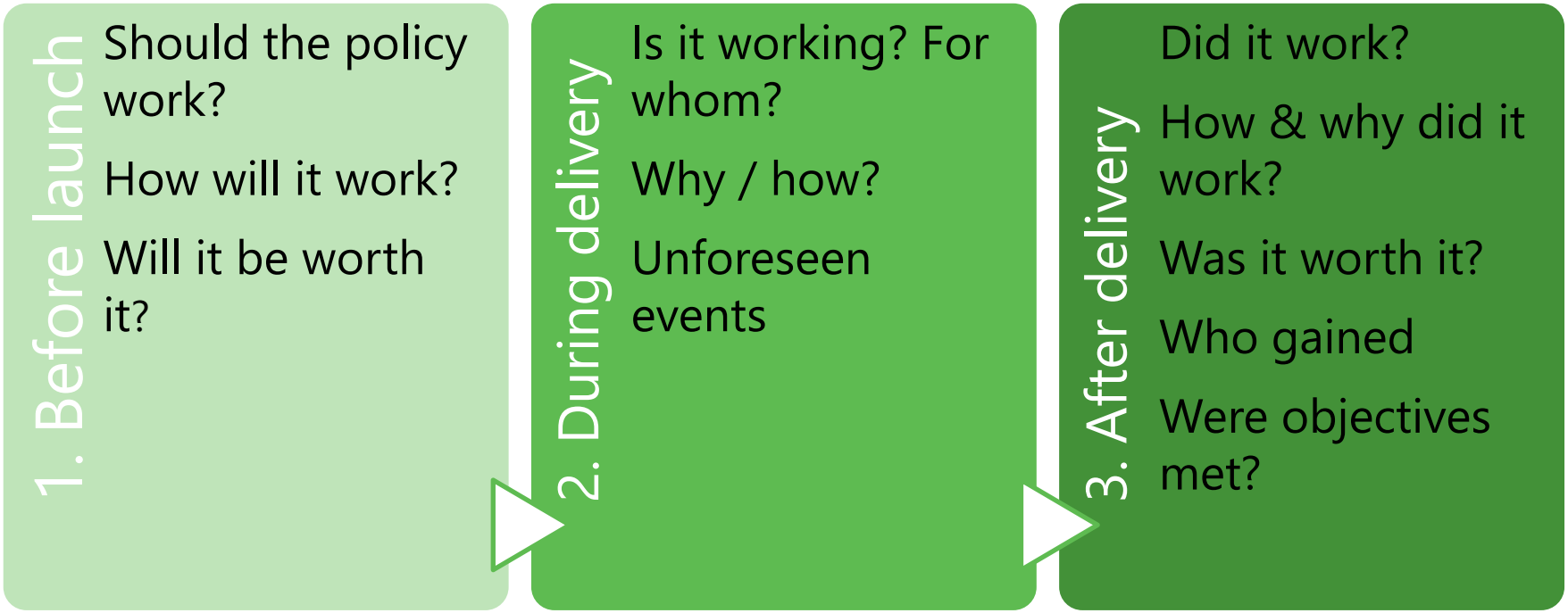
# The need for energy end use statistics

- Energy systems are transforming
- To identify cost effective steps for each country's Clean Energy Transitions
- Increasing desire for detailed data on energy end use to make informed policy choices
- Energy use data creates understanding of the service needed – the why energy is used, not just the what
- Need detailed energy data and related activity data
- Learning from each other, sharing tools and new ideas, developing new approaches
- Design, monitor and evaluate policies

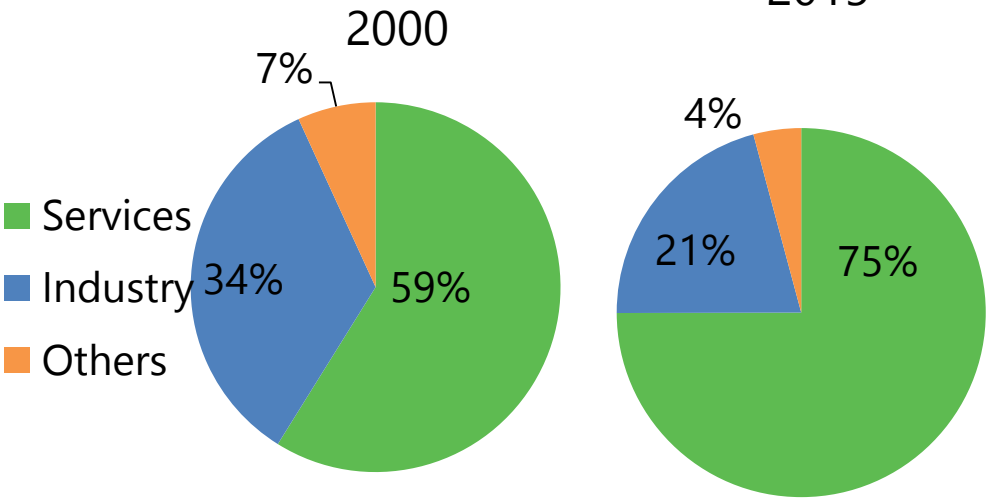
# When to Monitor and Evaluate?

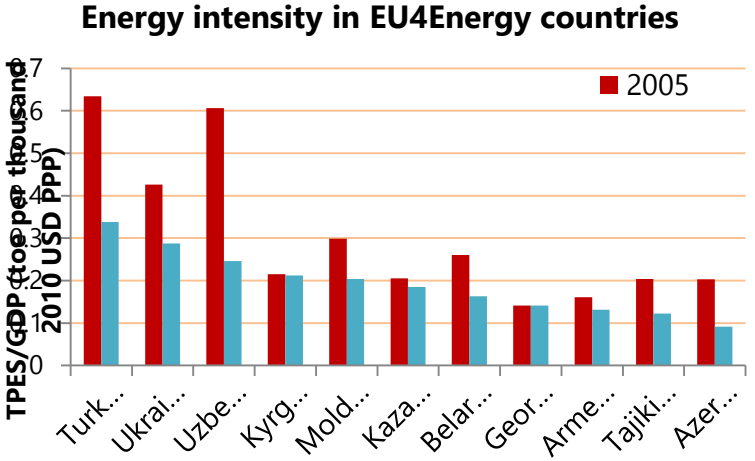


# What information is needed to understand energy efficiency?

# What other factors affect energy intensity?

- Size of the country
- Climate
- Economic structure




| Energy intensity MJ/US$PPP | 2000 | 2015 |
|---|---|---|
| **Total** | **3.2** | **3.0** |
| Industry | 7.2 | 10.4 |
| Services | 1.0 | 1.0 |
| Others | 2.1 | 2.9 |

**Overall intensity can fall, for structural reasons - Need for detailed indicators to understand real efficiency**

# The IEA Energy Efficiency Indicators (EEI) Template

## Energy Efficiency Indicators Template

## country name

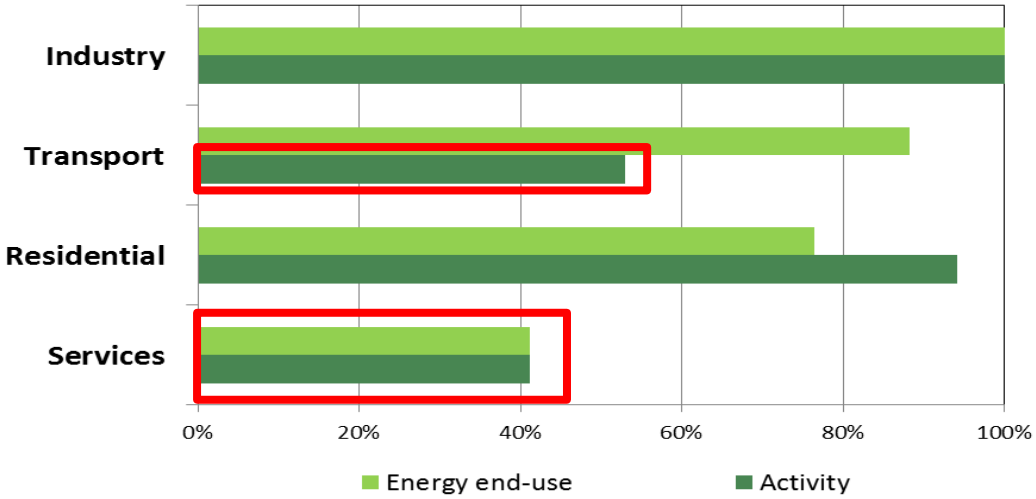
| COUNTRY DATA SECTION (to be reviewed and updated) | |
|---|---|
| MACRO ECONOMIC DATA | Macro economic and activity data |
| COMMODITIES | Production outputs from selected energy-cons |
| INDUSTRY | Energy consumption by ISIC categories |
| SERVICES | Energy consumption by end-uses in the servi |
| RESIDENTIAL | Household energy consumption by end-uses |
| TRANSPORT | Energy and activity data for passenger and fr |
| **IEA DATA and AGGREGATE INDICATORS** | |
| ELECTRICITY GENERATION | Electricity generation from combustible fuels and efficiencies |
| BASIC INDICATORS | Predetermined set of aggregate energy and activity indicators |
| **SUPPORT TOOLS** | |
| USER REMARKS | To incorporate comments associated to the data from the individual sheets |
| DATA COVERAGE | Generates a graphical summary of data coverage (completed vs. expected) |
| SINGLE INDICATOR GRAPHS | To generate a graph for one energy indicator |
| MULTIPLE INDICATORS GRAPHS | To generate a graph comparing trends from multiple indicators |
| CONSISTENCY CHECKS | To run the integrated consistency checks |

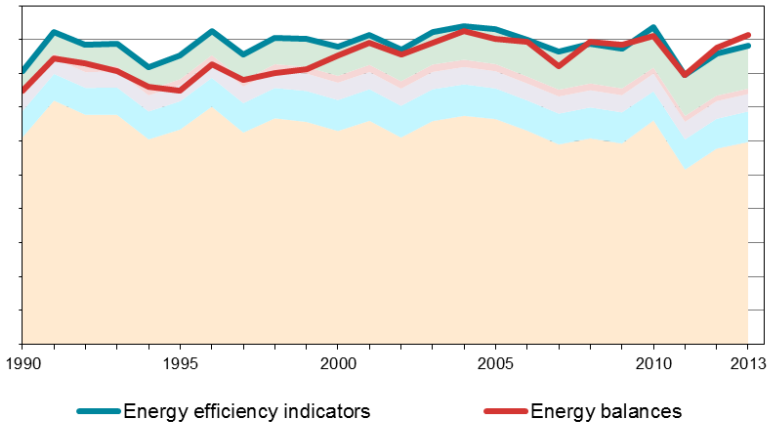
**Energy consumption** & **Activity** data for:

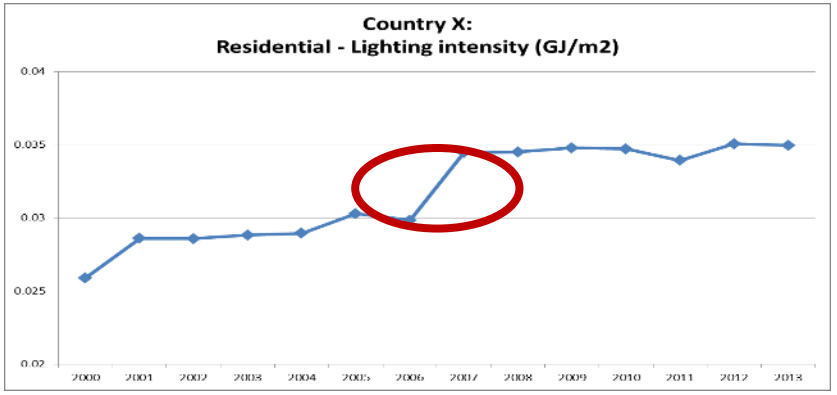
- INDUSTRY
- SERVICES
- RESIDENTIAL
- TRANSPORT

Source: http://www.iea.org/media/statistics/topics/energyefficiency/IndicatorsQuestionnaire.xls

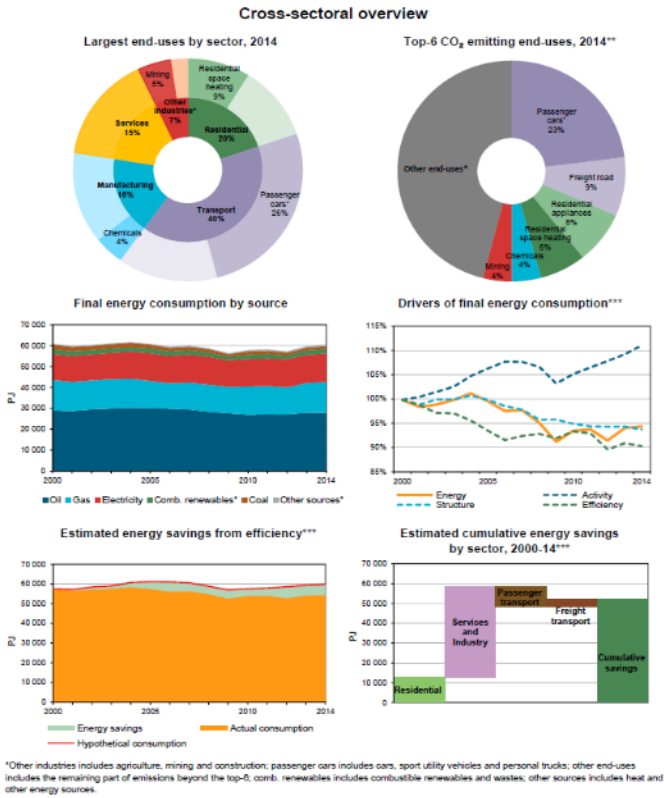
# Challenges faced by countries
# Completeness, Consistency, Continuity

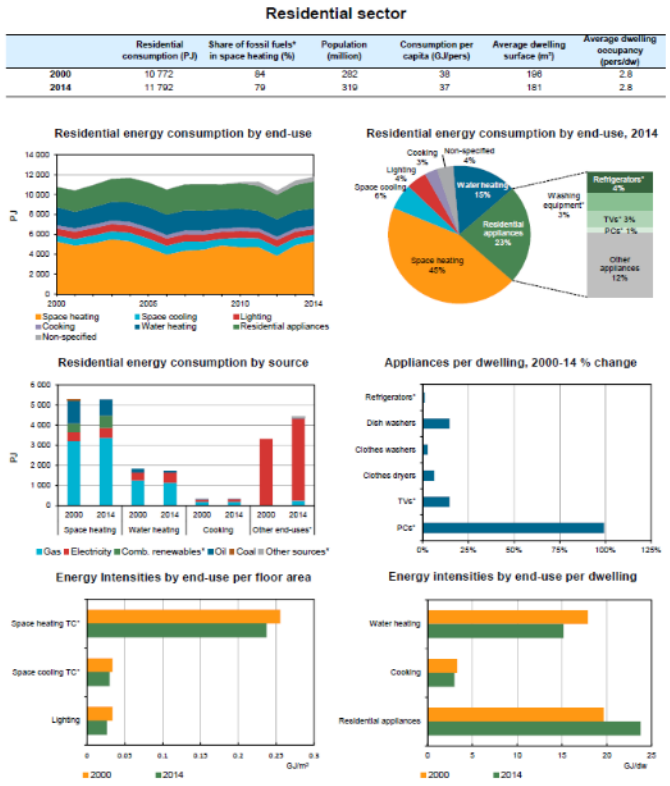


# Energy efficiency indicators highlights

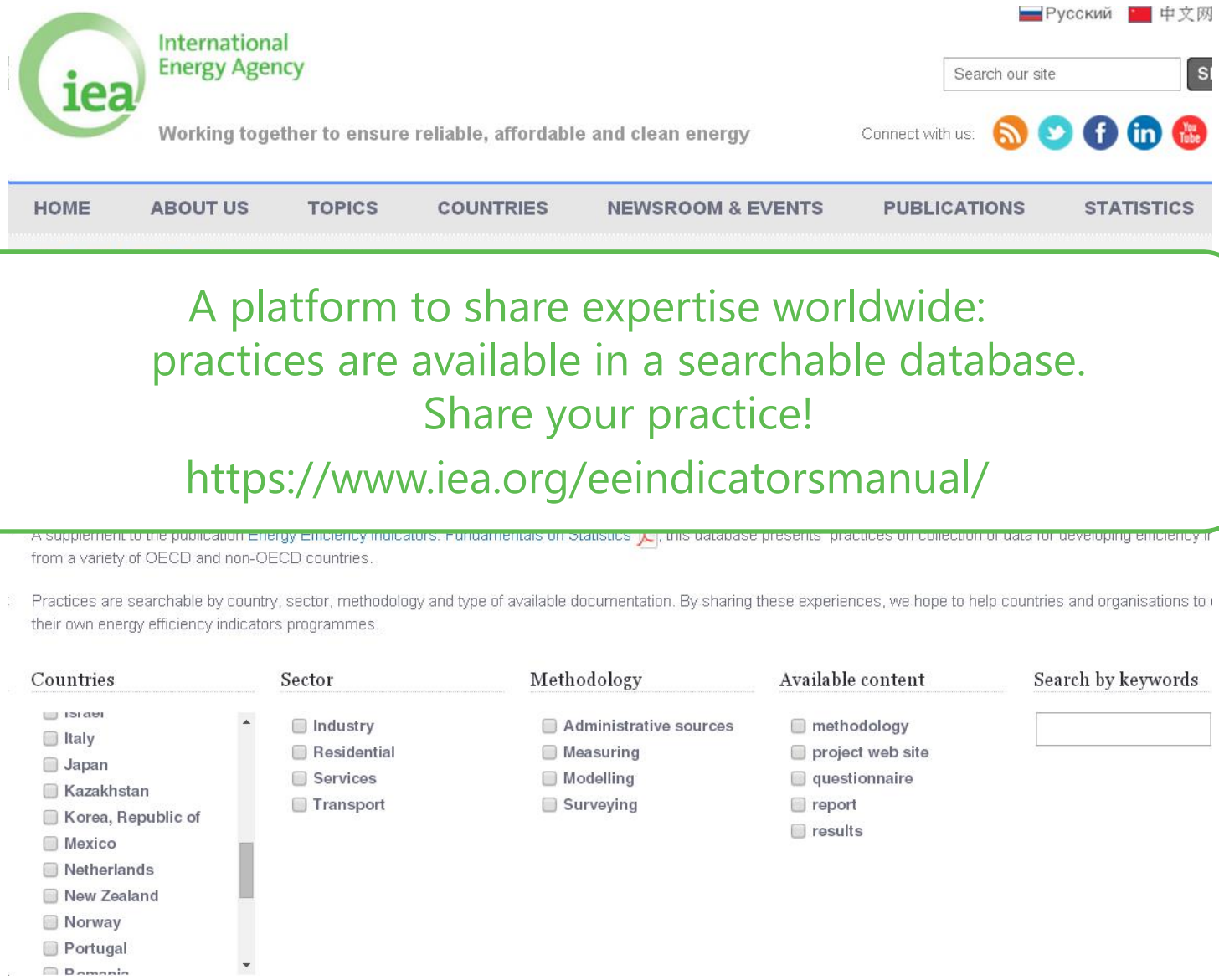




https://www.iea.org/publications/freepublications/publication/energy-efficiency-indicators-highlights-2016.html

# Energy Use data collection

- Maximise the use of administrative data
- Remove barriers to data sharing across gvt (survey and admin)
- Operational policy data can be really effective
- End use surveys likely to be needed covering energy consumption and activity data
- Plan cycles to cover residential, services, industry, transport (what time gap)
- Smaller survey run twice, better than one large one
- Requires funding, but having no data will cost more

# Country Practices Database



# Digitalization - A potential game changer for energy data:

- Already increasing use of GIS and data matching (e.g. UK's NEED matching data to understand energy efficiency)
- Significant potential with the appropriate regulatory/legal framework
- Smart meters and systems provide the scope for very detailed data

Could it happen?

- Official stats do not need time critical data, aggregation over time periods (e.g. 1 hour) or time lags (weeks) still a real benefit
- Detail data could have a longer lag of months
- Need legislation to maximize the benefit  of using data whilst ensuring data protection

# End-use and energy efficiency data are vital

- Shows by who, where and why energy is being used
- Creates the means to design cost effective policies
- Provides the means to monitor and evaluate and thus adapt

- G20 Energy End Use initiative can help by:
  - Developing and sharing methodologies for data collection
  - Delivering manuals, sharing practice and targeted training events
  - Helping to understand and create access to new data sources
  - Ensuring consistent, accuracy and meaningful data inform policy
  - Promote use of data in policy making

"You cant control what isn't measured"

# Potential goals for this workshop

- Where we identify good practice – how can we share it?
- Are there specific areas that we should focus on – possible working groups to maintain momentum?
- How can we achieve greater consistency between efficiency and energy balances data?
- How can we ensure meaningful and accurate data are used – e.g. reduce unspecified
- How can we educate data users?
- What training and capacity building in needed?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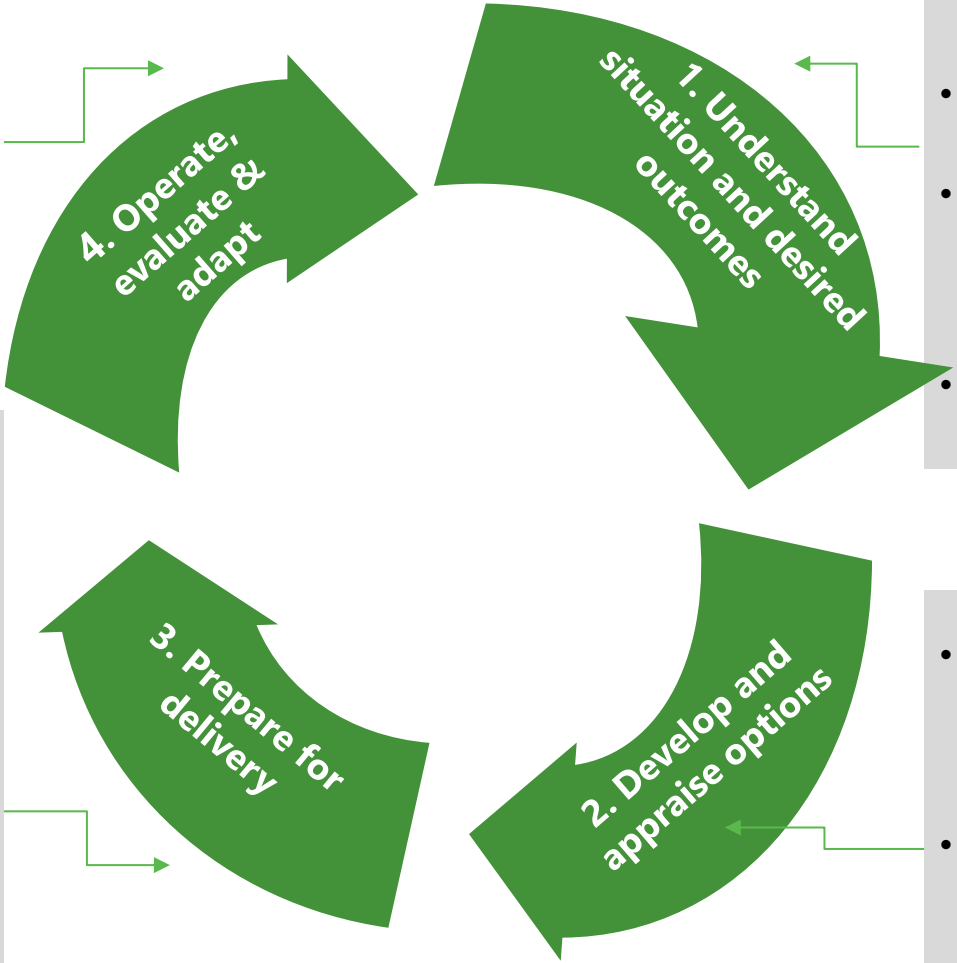
# How do energy statistics help policy-making?

- Monitoring performance indicators and expected benefits
- Evaluation and reporting




- Do we really understand what the problem or issue is?
- Are you sure there is a gap?
- What policy or evidence is already out there & what are others doing in the country broad?
- What outcome would indicate success?

- Understand, quantify & analyse impacts, costs, risks & benefits of policy options,
- Address evidence gaps & identify research & analysis required

- Undertake pilots & collect good practice
- Benchmark against other schemes
- Agree and put in place delivery arrangements with delivery partners and regulators
- Put in place policy monitoring, evaluation & reporting mechanisms