International Energy Agency

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Toolkit: Energy efficiency policies and target setting

Buildings: Maxine Jordan, IEA and Ian Hamilton, UCL Energy Institute

Pretoria, Wednesday 16th October 2019

Buildings energy efficiency sessions in partnership with:

UCL ENERGY INSTITUTE

UCL

Energy Efficiency Training Week: Buildings programme

1. Where to start: Energy use in buildings
2. Where to start: Energy efficiency potential in buildings
   Special session: GlobalABC Regional Roadmaps
3. Toolkit: Energy efficient building design technologies
4. Toolkit: Energy efficient building system technologies
   Special session: Green Building in Africa – *Elizabeth Chege, KGBS*
   Special session: The GlobalABC Africa Roadmap for buildings and construction
5. What are the steps? Determining the current status of policies
6. **Toolkit: Energy efficiency policies and target setting** *with guest speaker: Hlompho Vivian, GBC SA*
7. What are the steps? Implementing codes and standards
8. What are the steps? Building operations and procurement *with guest speaker: Christelle Van Vuuren, Carbon Trust*
   Special session: The multiple benefits of energy efficiency
9. Did it work? Evaluation and energy efficiency indicators
   Special session: Financing energy efficiency in buildings
10. Buildings quiz

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Energy Efficiency Training Week: Buildings

6. Toolkit. Energy efficiency policies and target setting

Trainers: Ian Hamilton, UCL Energy Institute, Hlompho Vivian (Green Building Council South Africa)

Purpose: To teach the fundamentals of how energy efficiency targets and policies can be used in tandem to reduce energy use in buildings and meet energy and development goals.

Scenario: The incoming government wants to implement a range of policies to support a rapid increase in energy efficiency.

Discussion question: How do you identify, prioritise and quantify these policy options

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Guest speaker – Hlompho Vivian, GBC SA

Target Setting

Targets matter

Using roadmaps

National targets

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Target setting

- Setting a target is not about guessing what you can achieve.

- It involves knowing where you are now, what you are trying to achieve, and determining challenging but realistic amounts of improvement needed to get there

Target setting: the process

- **Targets:** the desired level of performance you want to see, as measured by indicators, that represents success at achieving your outcome.

- **Stretch Target:** challenging but realistic target should be able to reach with some effort

Target setting: the process

- **Specific:** what you plan to achieve is clear
- **Measurable:** there is a way to determine whether or not you have achieved it
- **Attainable**
- **Relevant**
- **Timeframe** is specified

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Target setting: the process

Step 1: Define where you are now

- **Method 1 — Use Historical Data**
  - It can be helpful to use data that your unit has already gathered to establish a baseline, or starting point, for your target.

- **Method 2 — Use External Sources**
  - When you do not have historical data, you might consider using information from outside data sources to benchmark, or compare your performance data with those of other comparable settings / sectors. Then set targets that seem reasonable in light of the benchmarking information you've gathered.

EFFECTIVENESS TARGET	OUTCOME TARGET
Within two years, 80% of building permits issued will be offered incentives for **achieving a stretch code**.	**90% of buildings** will implement the latest green building standards **by beginning of the next code improvement cycle**.

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Target setting: the process

Step 2: Define what you want to achieve and by when

- Setting a target and its timeline is a delicate balance between **challenging and realistic**.
- A stretch target is intended to "**raise the bar**" so as to inspire people, but must also be capable of being met with through skills, knowledge, and resources.
- "Stretch" targets usually requires **significant effort to achieve**. Ask yourself how much of a stretch will motivate without causing people to become overwhelmed or demoralized.

*N.B. It's important to **carefully evaluate the historical data** you're considering using as your target baseline. Review past data and drivers that influenced those trends. Consider any circumstances that should inform your target.

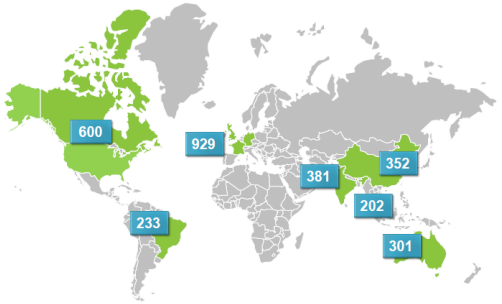
Target setting: the process

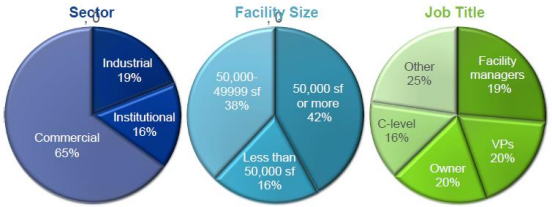
Step 3: Things to consider

- **Timeline:** Be clear about how long you need to achieve your target. Will you need to set intermediary targets?
- **Scenario:** Conditions will be changing over the course of the policy development cycle and this will be important for setting the recent trends and baselines in the preceding years
- **Possible Target:** Set the target as it relates to change you are focused on achieving and by what end point (e.g. X% of appliance sales achieving best available technology (BAT) by 2025
- **Resources:** Do you have the necessary resources needed (funding, staff, processes, buy-in, etc.) to achieve the target?
- **How can it be achieved?** Can it be achieved by incentives, regulations, standards or certificates, more resources, improving a process, an investment in technology?

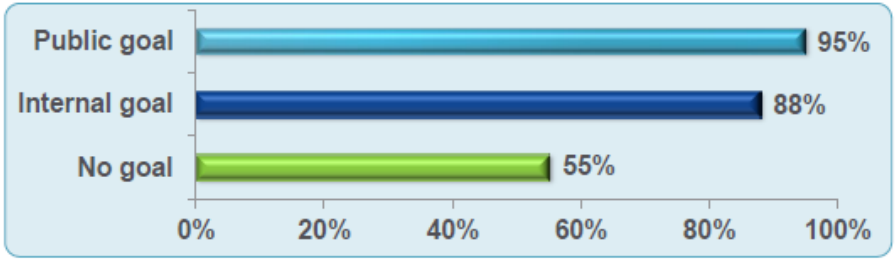
Targets Matter – What is committed (and visible), gets managed

Of over 3,000 respondents from 10 countries….

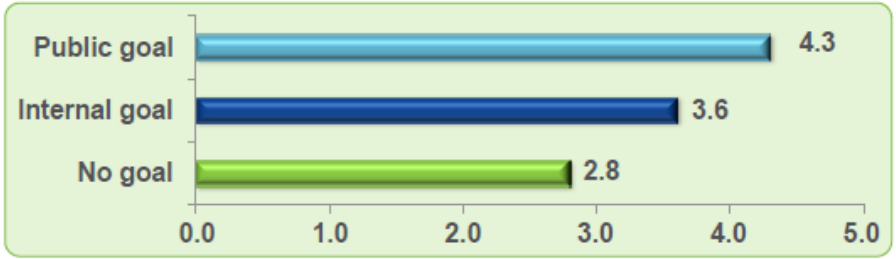




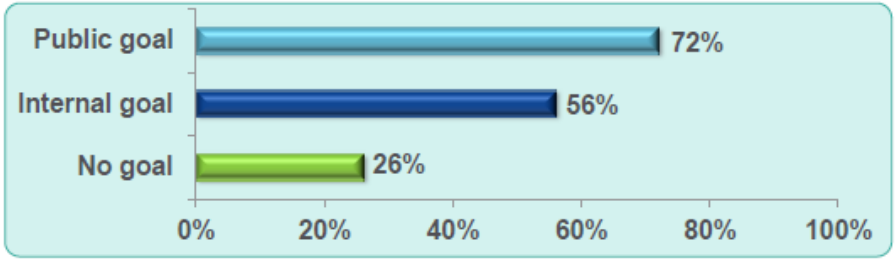
Percent that **have invested** in energy efficiency or renewable energy in past 12 months:



Average number of energy efficiency **measures adopted** in the last 12 months:



Percent that **plan to increase investment** in energy efficiency or renewable energy in next 12 months:



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Target setting process

Stakeholders engagement

Information collection: opportunity to gain feedback on needs and goals

Consensus building: while not everyone will agree, effective stakeholder engagement processes will build trust

Data and information

Information collection: building on the information from stakeholders

Market analysis: to understand the current market conditions and opportunities

Develop a roadmap

Targets and timelines: setting achievable and aspirational targets and timelines to progress on energy efficiency policies

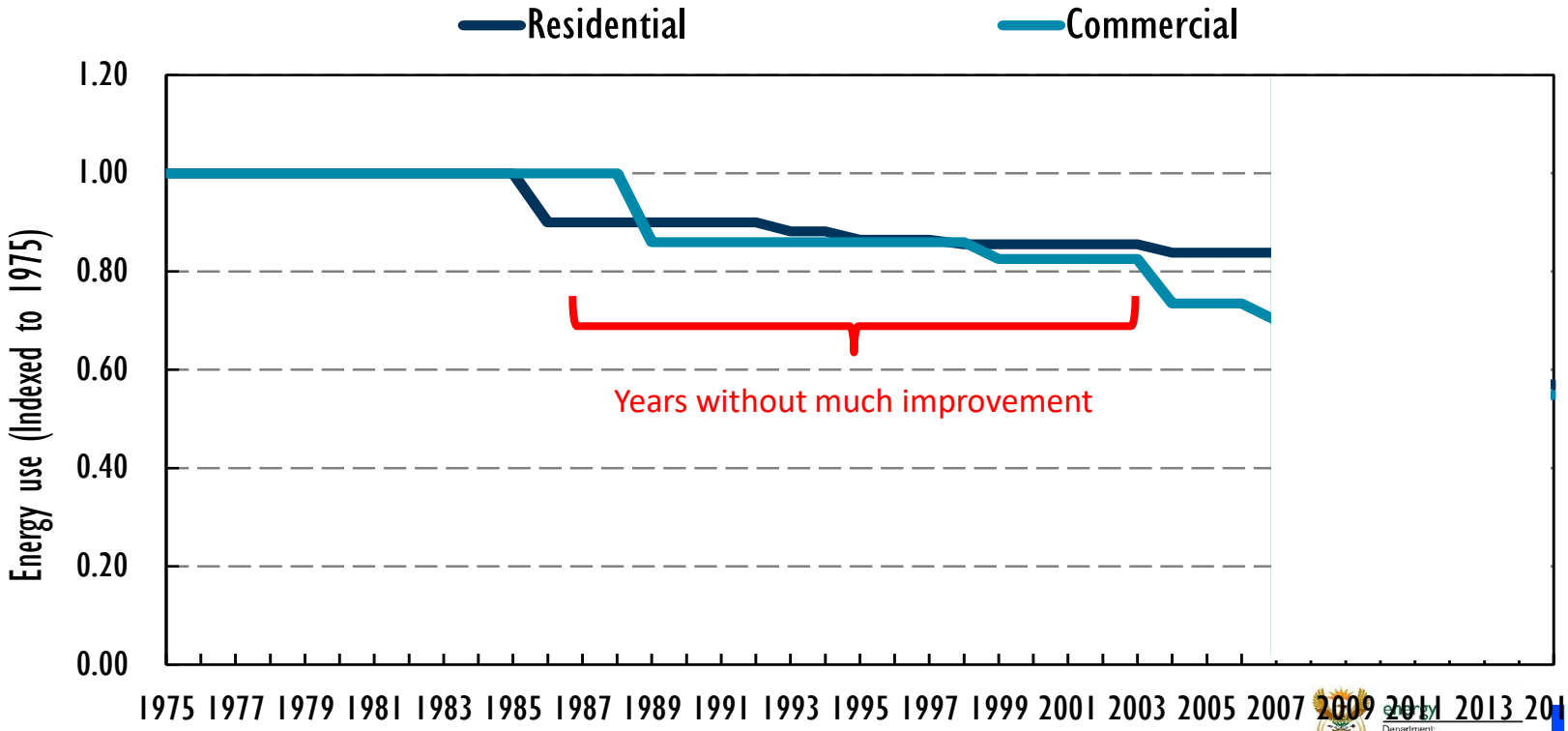
Methods and key actions: identifying the tools and resources to make the targets achievable

Target setting: example in Jakarta, Indonesia

Source: http://greenbuilding.jakarta.go.id/index-en.html

Target setting: Building code targets in the United States

2007 Target: **resulted in 32% improvement** over two code cycles. More energy savings than any period since 1975.



Source: US DOE and IEA Energy Efficiency Market Report

Roadmaps for Buildings and Construction

Setting targets for a zero-emission, resilient and efficient buildings and construction sector

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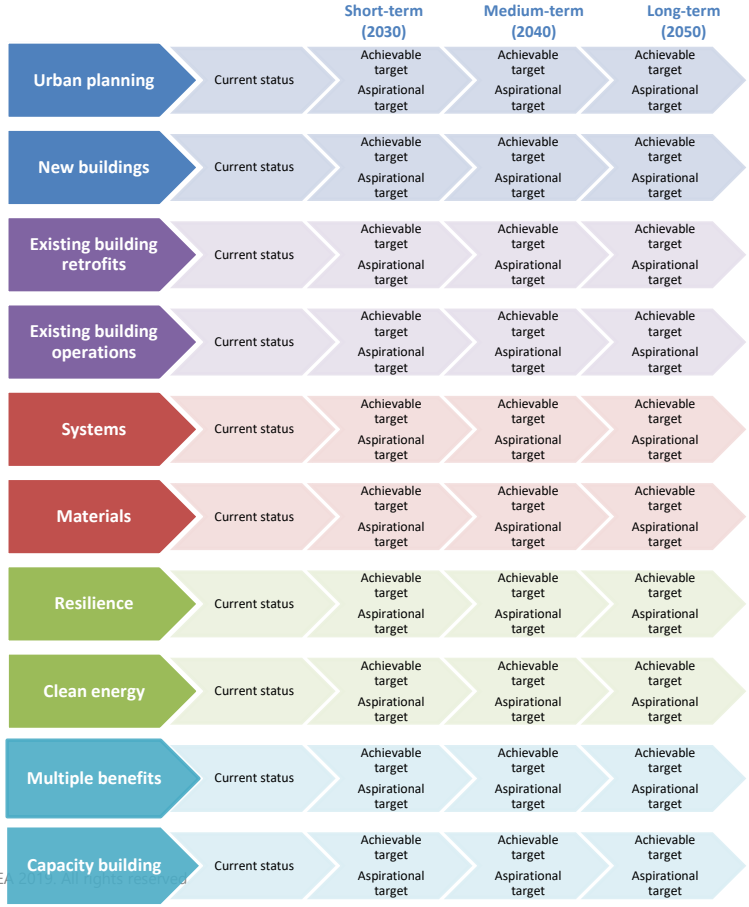
Buildings and Construction Roadmap template



Methodology and template:

- A template has been created for use by any organisation or government.
- Based on work through the Global Alliance for Buildings and Construction (GlobalABC).
- To enable the development of meaningful targets and timelines to achieve low-emission, efficient and resilient buildings and construction.

Each category includes:

- Current status
- Achievable targets
- Aspirational targets

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Energy Efficiency Training Week: Buildings

Scenario:

By what dates do you think your design and system technologies could achieve today best available performance levels?

What evolution of policies will be necessary to support this transition? Set some milestones for 2030, 2040 and 2050 ?

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