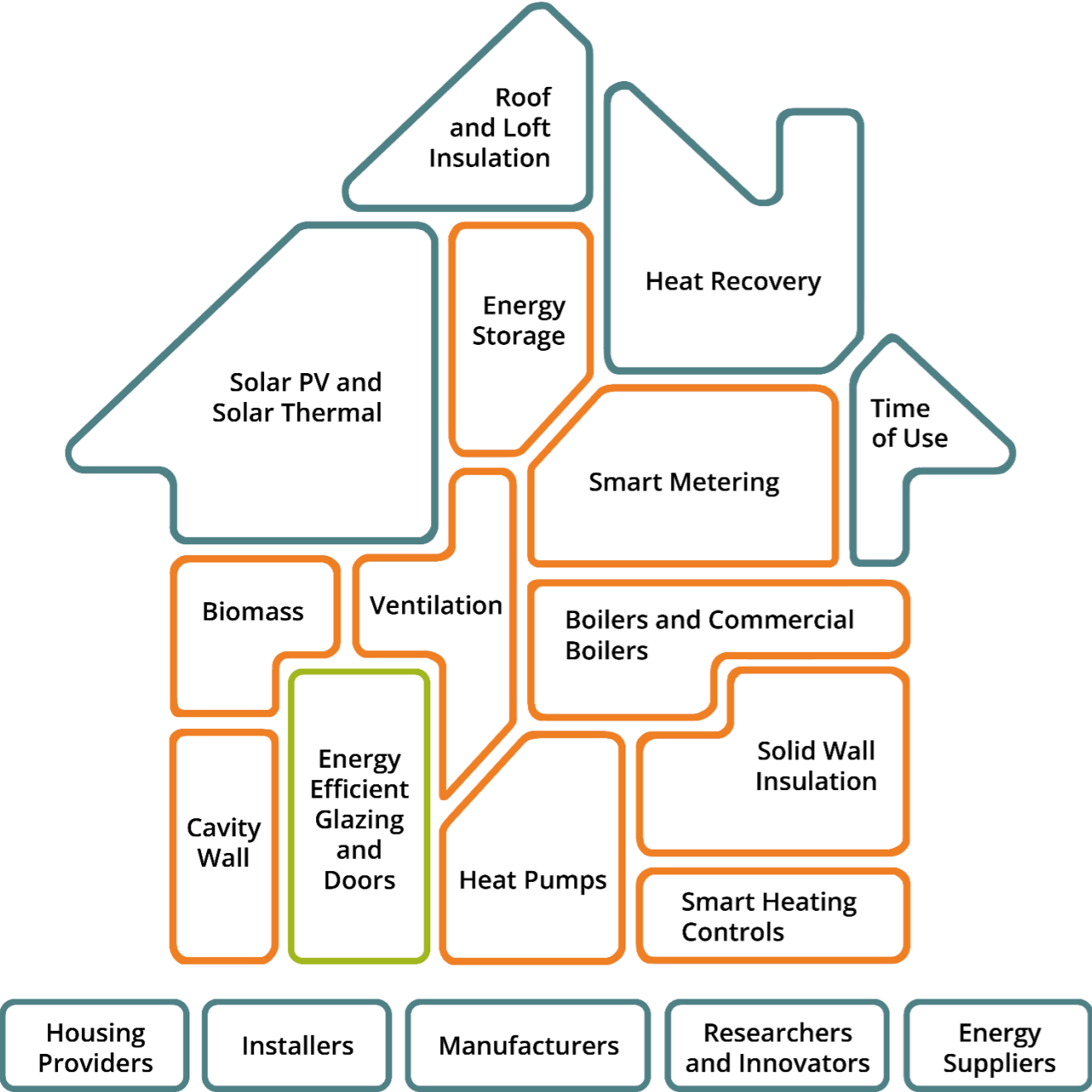




# Introducing the SEA



In a world of finite resources, the Sustainable Energy Association exists to help **create living and working spaces fit for future generations.**

Our work seeks to align the interests of business, politicians and consumers to make this a reality, supporting improvements in public health, increasing national employment and generating sustainable economic growth.

We are industry leaders in energy in buildings. We are technology agnostic and provide objective, evidence-based policy positions which help shape how we think about, generate and use energy. We are constructive, collaborative and committed to achieving our vision, **by ensuring that buildings are energy efficient, net-zero carbon, warm and healthy.**

# SEA's Holistic Approach to Delivering Net Zero

**Address the Fabric First:** Lower energy demand.

**Low-Carbon Heating Systems:** Move away from burning fossil fuels.

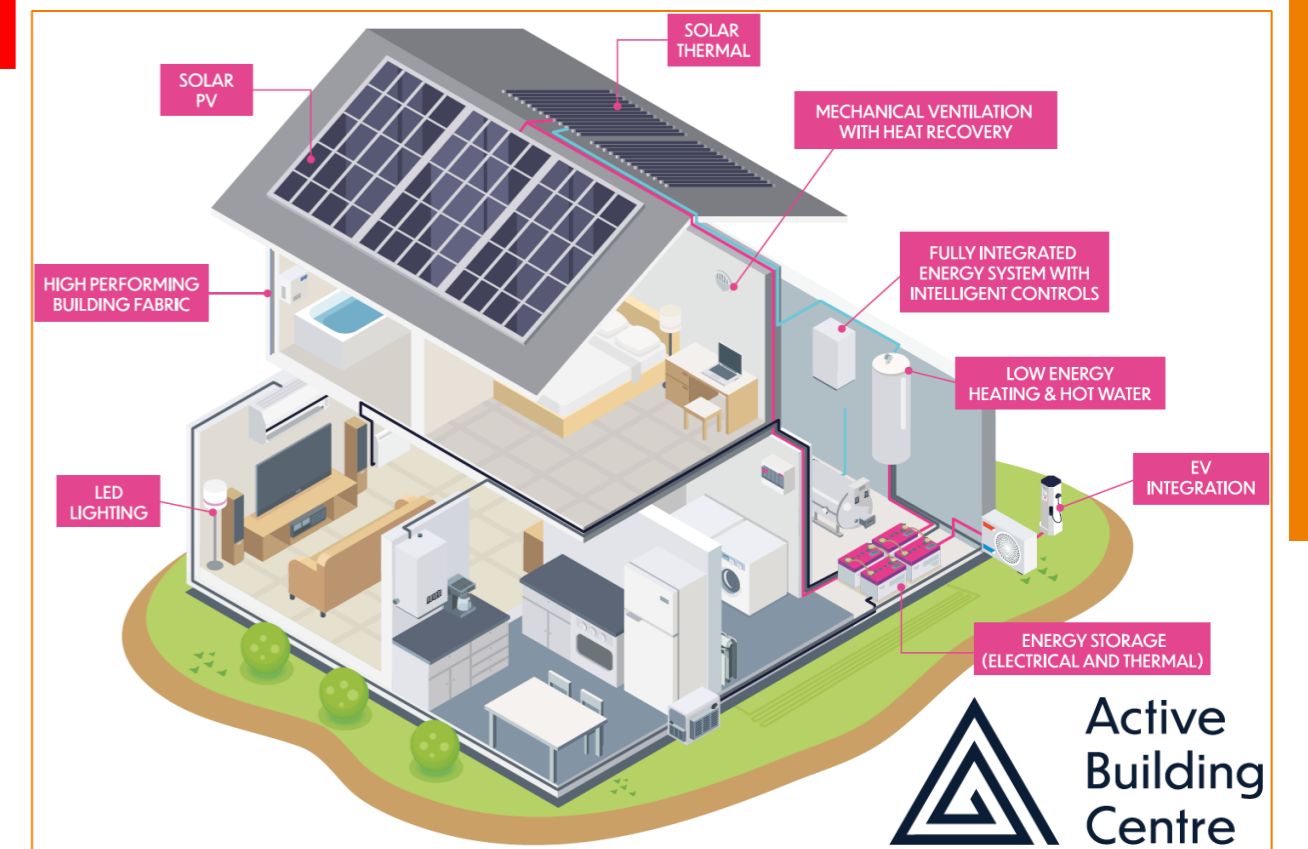
**Technology-Agnostic Approach:** Appropriate technologies for the building and its occupant that lead to the right outcomes.

**Adaptation to Climate Change:** Resilience to the adverse impact of worsening weather conditions and temperature rises.

**Improve Health and Wellbeing:** Thermal comfort, air quality, acoustics, lighting, etc.

**Quality and In-use Performance:** Prevent unintended consequences. Effective decarbonisation of buildings.

**Use of Innovation:** Advanced manufacturing, digital techniques (shadows), building passports, Active Buildings, etc.



# Technology Agnosticism: Low-carbon Technologies

## Heat Electrification

Heat pumps (air-, water-, ground-, multi-source, hybrids etc.)

Direct electric (storage, resistive, infrared, radiant, MVHR, etc.)

Electric boilers

Heat Batteries

## On-site Generation

Solar (thermal, PV, PVT, BiPV)

## Low-carbon Fuels

Biomass and biogas/bioliquids (HVO, biomethane, rDME, bioLPG)

Renewable hydrogen

## Innovations

## Complementary and Ancillary Measures

Smart thermal storage

Electrical storage (batteries)

Building Energy Management Systems & Smart controls

Waste-Water Heat Recovery (WWHR)

Centralised Mechanical Extract Ventilation





Active Building Centre (ABC)



Herschel Infrared



Mitsubishi Electric



National Energy Foundation (NEF)



The Association for Renewable Energy and Clean Technologies (REA)



Sovereign



Building Research Establishment (BRE)



IRT Surveys



Naked Energy



NIBE



Showersave



Thermal Storage UK (TSUK)



Electrical Contractors' Association (ECA)



Microgeneration Certification Scheme (MCS)



NAPIT



Oil Firing Technical Association (OFTEC)



Solar Energy UK (SEUK)



Windhager

# SUSTAINABLE ENERGY ASSOCIATION

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## 2. Flexible and Smart Building Energy Systems

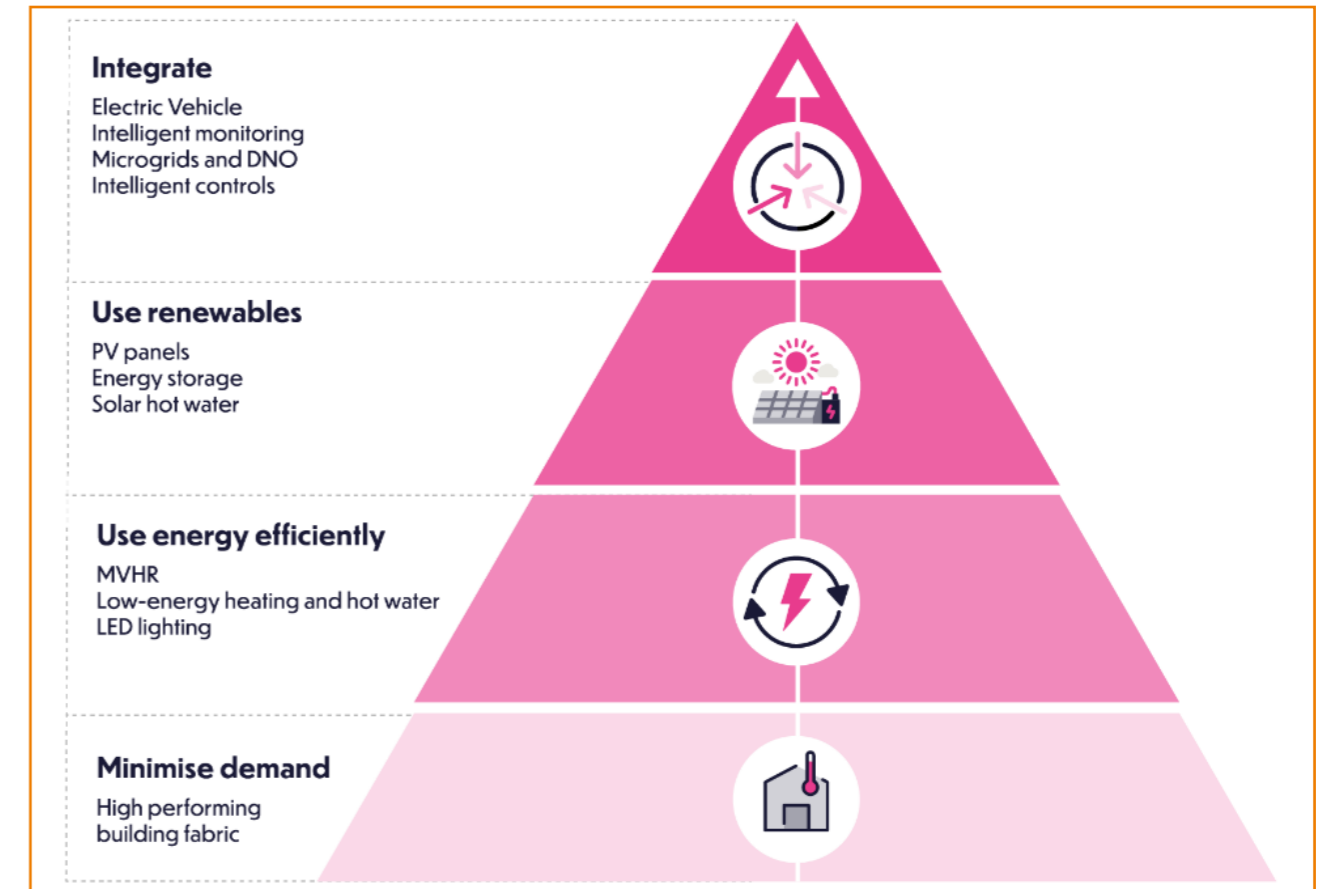
### Naturally Incentivise and Value:

- Energy storage (flexible assets)
  - Smart thermal storage
  - Electrical batteries
  - Thermal batteries
- Smart controls
  - DSR and intelligent energy management
- Holistic building energy systems

### Abundant Benefits (Building & Grid)

- Reducing cost of electrification (save: grid capacity/reinforcement and supply-side flex. assets (£10bn-£16bn/yr), generation capacity, and renewables curtailment (<£1bn 2021))
- Building-level cost & carbon reductions

### Case Study from ABC →



# 3. Effective Consumer Education and Engagement

## Focus on Consumer Outcomes and Preferences

- Matching consumer desires with solution
- Unlock proactivity and buy-in to Net Zero

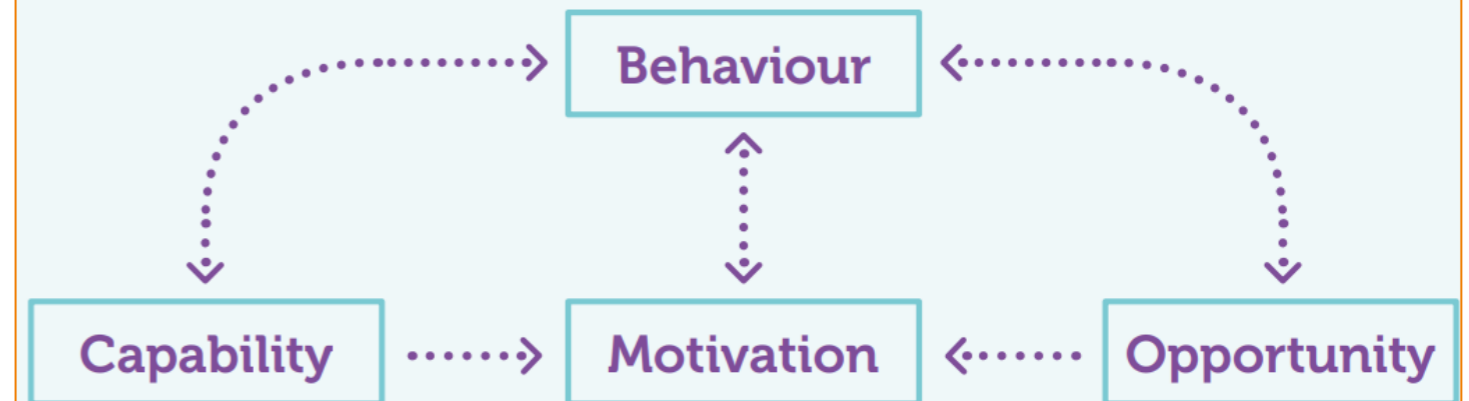
## Behavioural Analysis

- COM-B Model
- Behaviours: Capability, Opportunity and Motivation
- TA Approach=solution to problem

## Sovereign Case Study

- People-centric approach
  - Home and Place Standard
  - Qual. & quant. design & investment guide
  - Pathway to Net Zero (health, wellbeing, affordability)

**Fig.1:**  
**The COM-B Model.**





## 4. High Quality Skills and Clear Local and National Planning



### National TA Policy Unlock Local Delivery

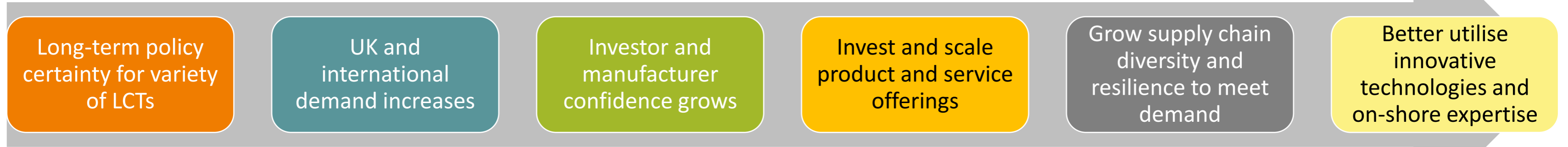
- Devolution of powers and responsibilities for building decarbonisation (new build & retrofit)
- LAEP and local Net-Zero plans (infrastructure, energy and fuel sources, pathway to Net Zero, etc.)
- Guide data-driven, outcomes-led, locally-appropriate delivery

### Guides Skills Requirements

- Volume and type of skills needed to deliver technologies (across time)
- High quality and holistic skills
  - Pan-construction and retrofit
  - Cross-trades

# 5. Stimulating Manufacturing, Supply Chains and Innovation

## Growing the Low-carbon Economy



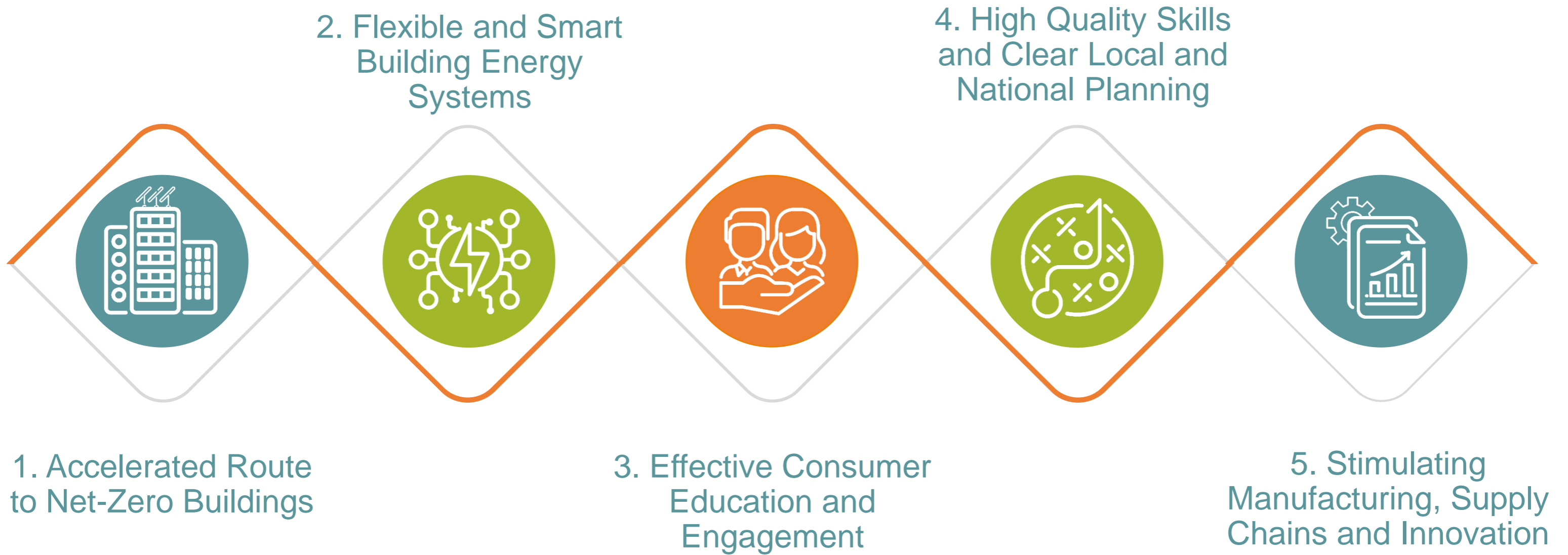
## Innovation

- Uptake of innovations core to TA approach
- Openminded to new solutions (new or existing)
- Incremental or more significant improvements
- Benefits for route to market and make use of existing innovation funding (current barriers)

**Case Studies (HP variants, solar thermal, electric boiler, IR, WWHR...)**



# Five Key Benefit Areas



# Thank You!

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Policy Advisor

