

# PassivSystems

Technology Platform/ISGAN/SENER workshop

Colin Calder  
CEO & Founder

[colin.calder@passivsystems.com](mailto:colin.calder@passivsystems.com)

**PassivSystems Ltd**

Medway House, Newbury Business Park  
Newbury, Berkshire RG14 2PZ, United Kingdom  
Tel +44 (0) 1635 525 050 Fax +44 (0) 8082 800 490



# Changing legislation

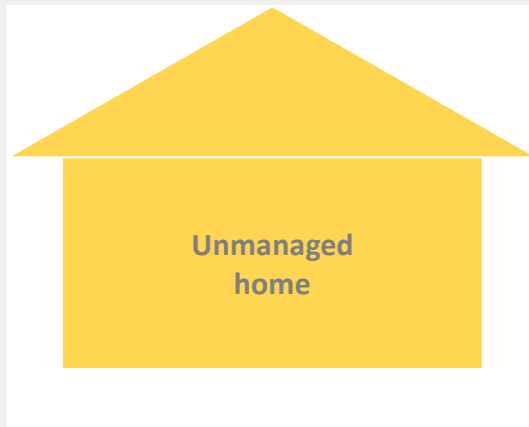
- **2050 Market drivers**

- Decarbonisation and move from gas to electricity
- Increase in intermittent renewable supplies
- Growth in consumer generated local energy
- New uses of electricity such as Electric Vehicles, Heat Pumps
- Encourage new market entrants (ESCO)



# Changing business models

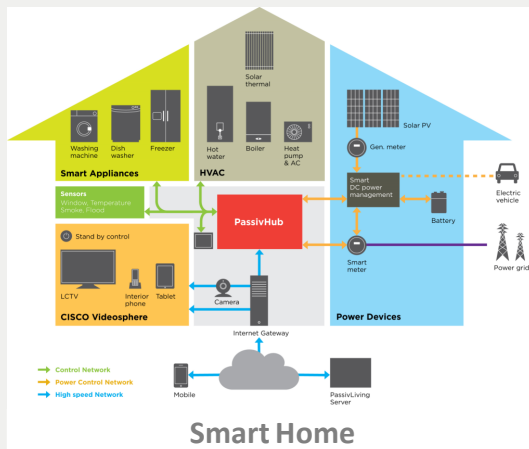
## Old business model



\$2,000 pa.



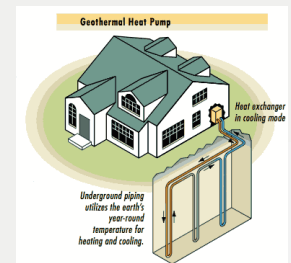
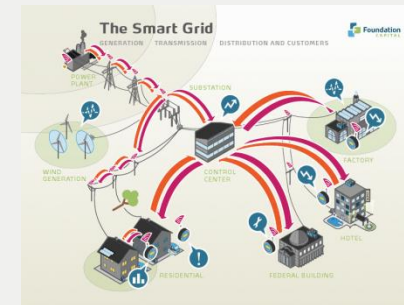
## New business model



\$1,200 grid supplied energy pa.

\$400 efficiency savings pa.

\$800 debt & service payments pa.



# Changing generation & storage mix



Hot water storage



Solar thermal



Air source heat pump



Solar PV



LI battery storage

# Consumer service vision

## Portfolio Insight & Management

### Consumer Insight

Electricity  
Consumption

Fossil Fuel Heat &  
Hot Water

District Heating /  
Cooling & Hot  
Water

Electric Heating /  
Cooling & Hot  
Water

Micro-generation

Energy Sinks &

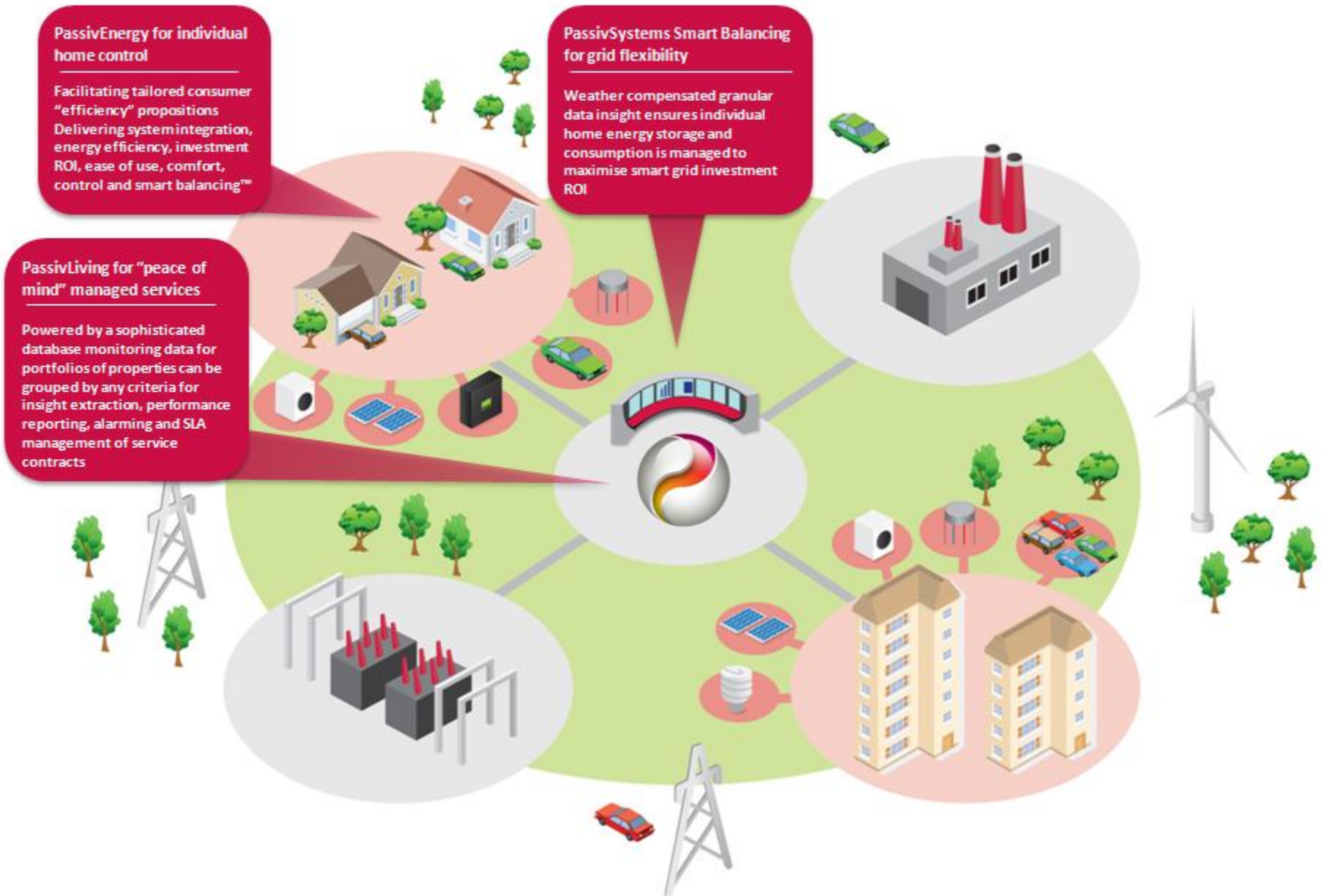
Lifestyle  
Characteristics

Building  
Characteristics

### Optimise & Control



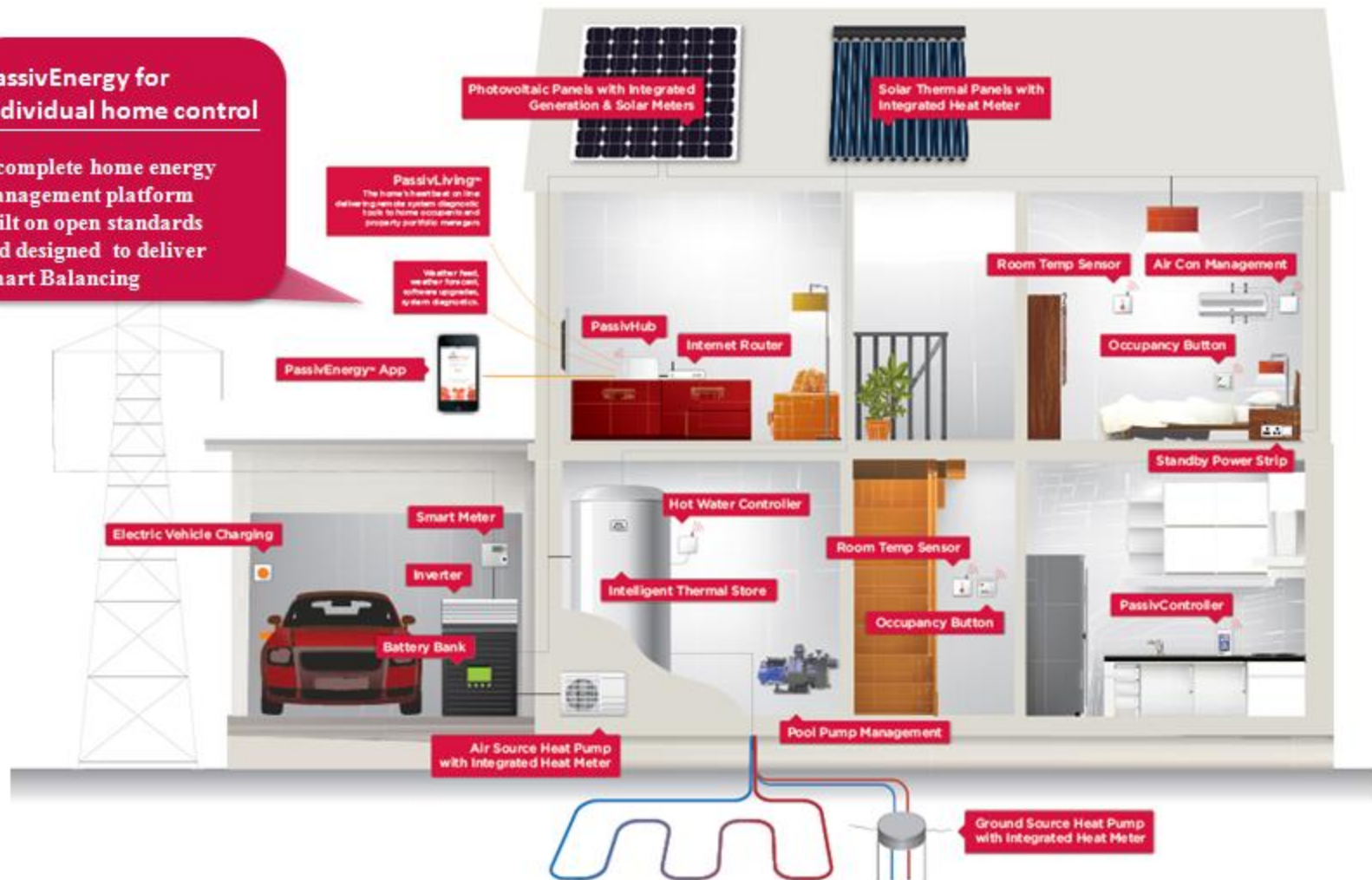
# A systems approach to smart grid ....



## ... with consumer value at its heart

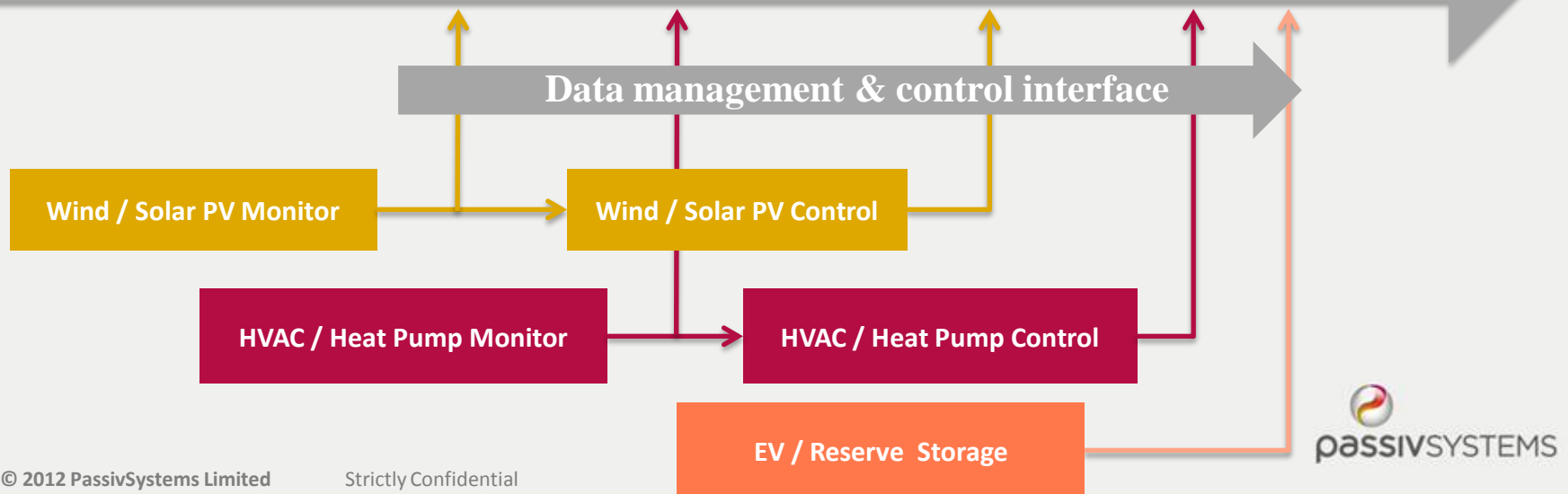
### PassivEnergy for individual home control

A complete home energy management platform built on open standards and designed to deliver Smart Balancing



# Consumer & grid integration

## Home Energy Management & Grid flexibility Platform



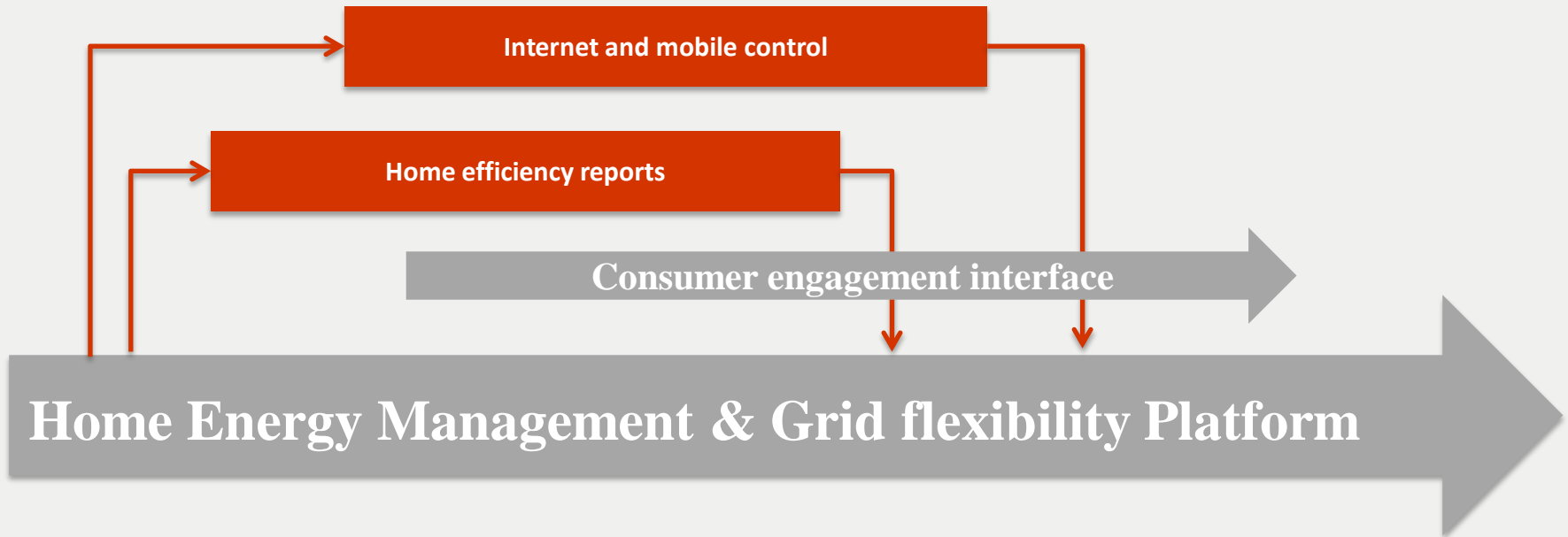


# Smarter controls - smarter revenue

## PassivEnergy Smart Balancing™ Platform

- Delivers greater response capacity with increased latency
- Makes “consumer aware” load control decisions
- Makes visible changing consumer energy profiles e.g. EV, heat pumps
- Will calculate day ahead forecast of “residential "supply and demand
- Utilises consumers assets to deliver “smart balancing” on grids with a high content of distributed renewable energy sources
- Response to volatile market prices and unplanned network or supply side constraints
- Increases ROI by smoothing annual seasonal peak demand

# Consumer & grid integration



# Report and recommend

## Home Reports

### Essentials

- Heat lost from home
- Heating system Effectiveness
- Heating Control Effectiveness

### Premium

- Heating energy use
- Hot water energy use
- Hot water usage patterns



Online or  
Paper delivery

**Personalised, engaging and actionable**

# Connecting with consumers

How should we connect with consumers?



By fitting into today's world



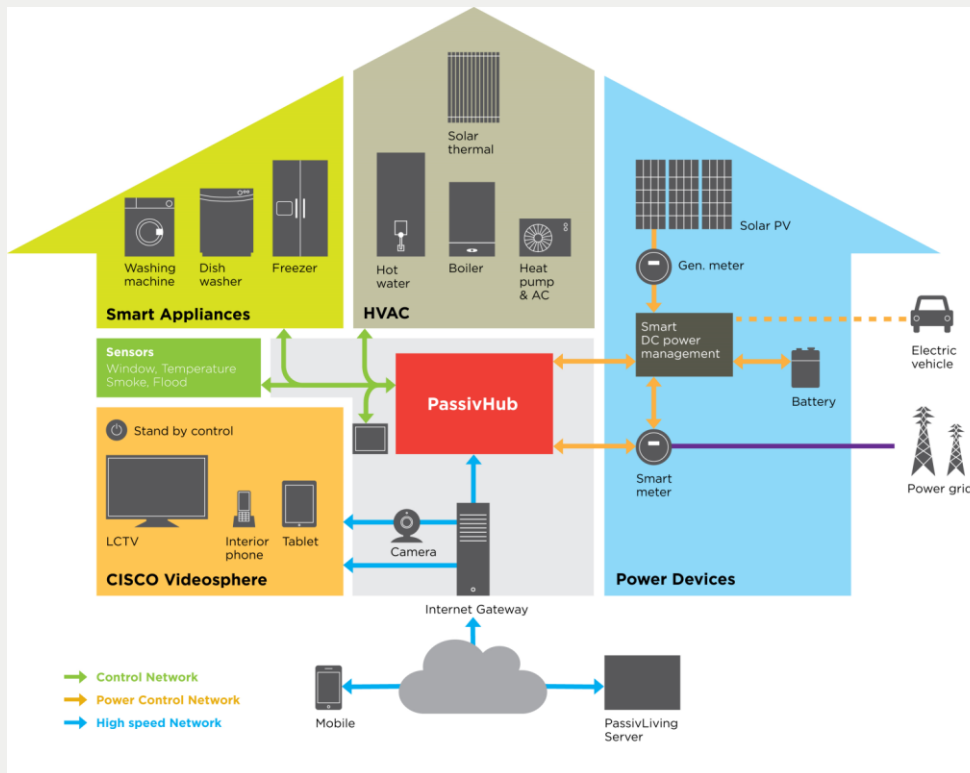
..... and making it easier





# Taking consumers on a journey

## A complete home services platform



.... with integrated controls



.. anywhere, anytime



# Smart balancing - value proposition

## Consumer

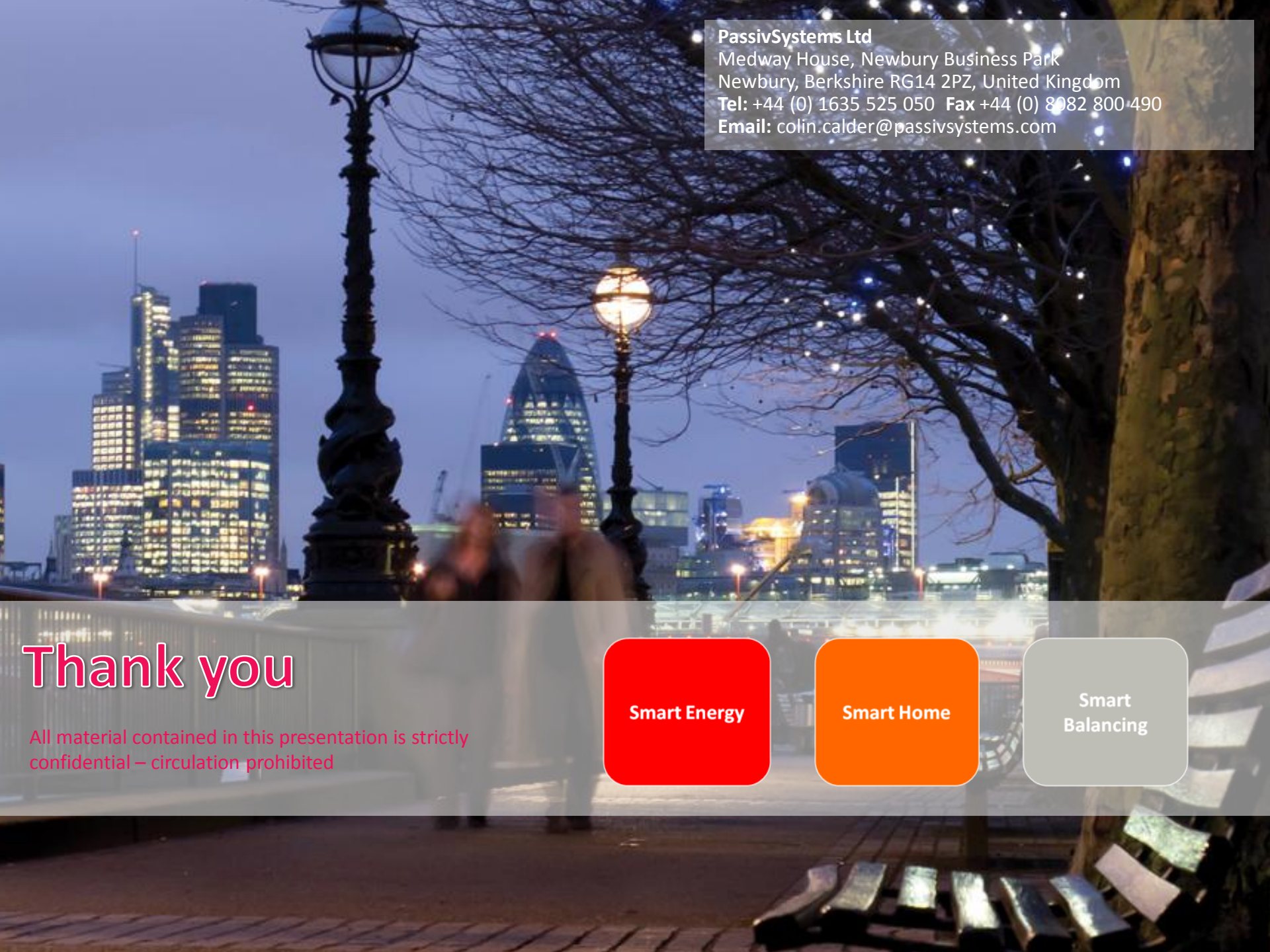
Cheaper electricity, non-invasive, security of supply

- I receive financial reward for making my home grid flexible
- I can store energy in my home and go off grid without it impacting my comfort or lifestyle
- I will be less affected by grid failures
- I can maximise use of my own renewable energy sources
- I can choose to make greater use of energy from green sources

## Energy company

Solves intermittency, increases ROI on renewables, achieves higher grid utilisation

- Manages energy storage in home allowing excess renewables to be stored when available
- Caps energy demand when renewables in short supply without impacting comfort
- Acts as a virtual power station for Smart Balancing™
- Increases customer stickiness by supporting longer term service contracts
- ESCO reap the benefits of:
  - lower operating costs through more balanced loads
  - greater predictability of energy demand and utilisation of renewables
  - reduced exposure to energy price fluctuation

A nighttime photograph of a cityscape, likely London, featuring the Gherkin and other skyscrapers illuminated against a dark sky. In the foreground, there are ornate street lamps and the silhouettes of trees and people walking on a sidewalk.

## PassivSystems Ltd

Medway House, Newbury Business Park  
Newbury, Berkshire RG14 2PZ, United Kingdom

**Tel:** +44 (0) 1635 525 050 **Fax** +44 (0) 8082 800 490

**Email:** [colin.calder@passivsystems.com](mailto:colin.calder@passivsystems.com)

# Thank you

All material contained in this presentation is strictly  
confidential – circulation prohibited

Smart Energy

Smart Home

Smart  
Balancing