



# THE IBM UTILITIES **FLEX PLATFORM**

CHANGING THE GAME FOR FLEXIBILITY SERVICES

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There is an explicit ask to all consumers to provision and activate their flexibility to help balance the increasing amount of fluctuating renewable production and the limitations in the power grid

“

Within the next decade, we will use up to two-thirds more electricity, and that electricity will no longer come from central power plants, but from decentralized production, which **fluctuates** as the wind blows and the sun shines. [...] It requires far more **flexibility** across the energy system than we have today.

”

**Dan Jørgensen**  
Minister of Climate, Energy and Public  
Utilities, Danish Government

**Source**  
Market Model 3.0, Danish Energy Agency, 2021

**MARKET MODEL**




**3.0**

THE ELECTRICITY  
MARKET AS THE KEY  
TO A CLIMATE NEU-  
TRAL SOCIETY




Danish Energy Agency, 2021

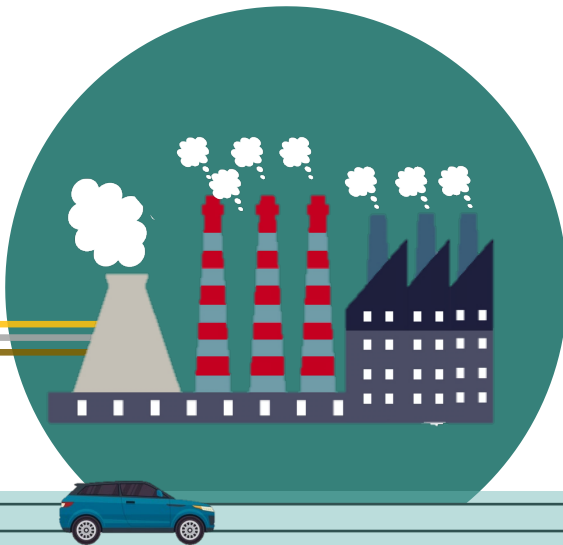
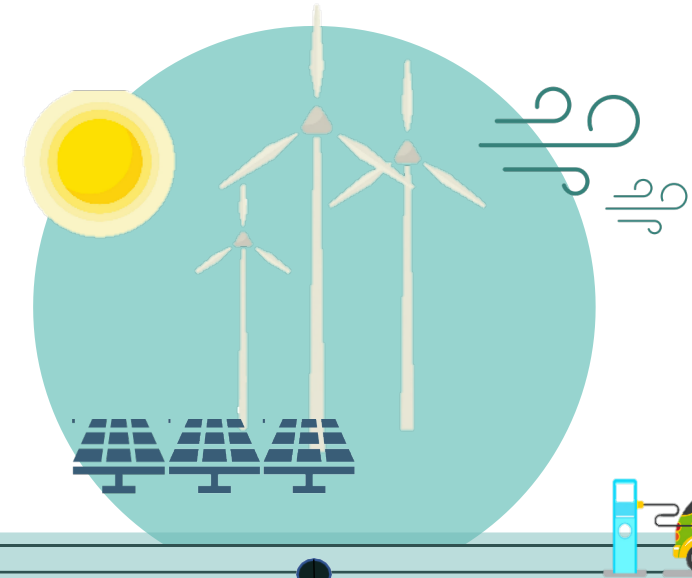
Denmark is one of the first countries where we are turning a societal climate challenge into a tangible opportunity for all electricity consumers

### TRENDS

-  Conventional to sustainable
-  Fossil fuels to electrification
-  Predictable to unpredictable

### CHALLENGES

-  Instability in energy systems
-  Congestions due to electrification
-  Volatile markets



### AN OPPORTUNITY FOR THE CONSUMERS TO CONTRIBUTE

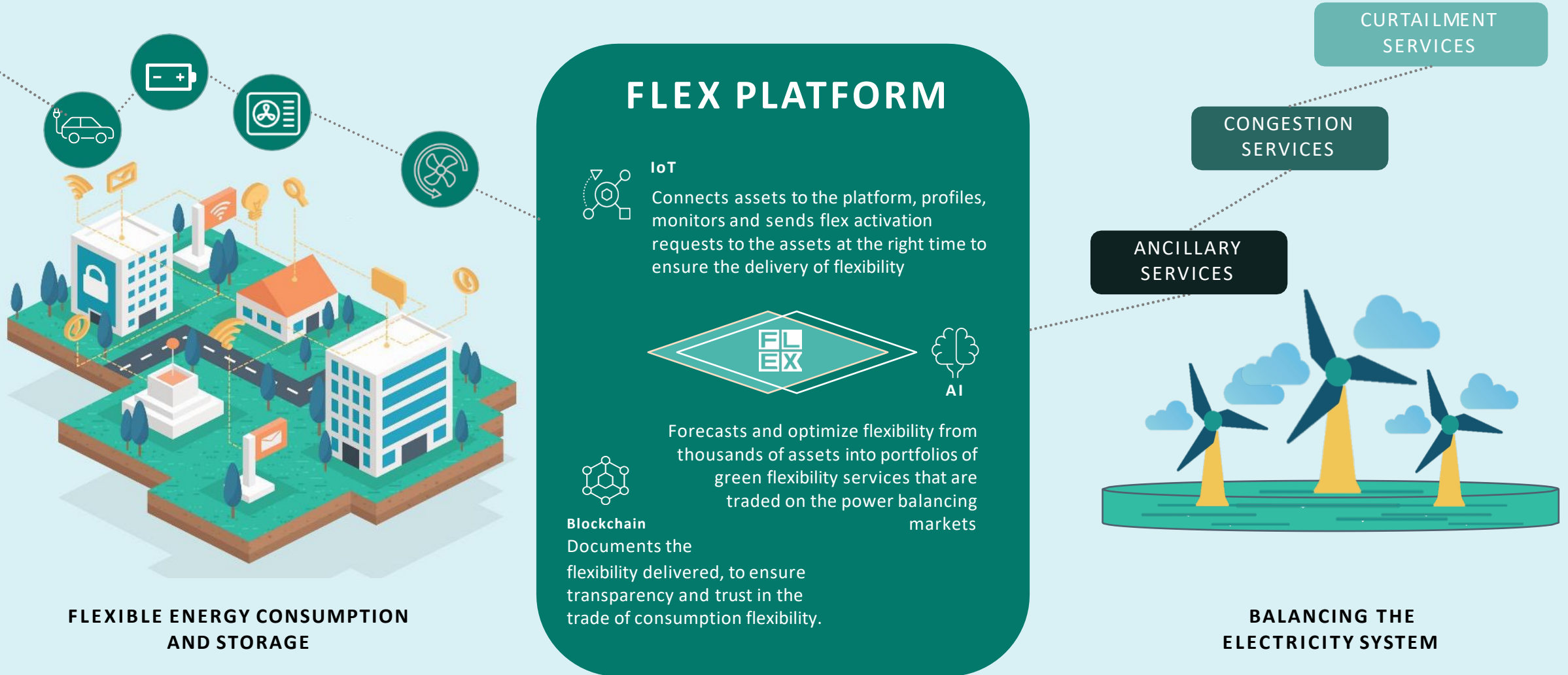
-  Earn money by provisioning flexibility
-  Contribute to the reduction of thermal power plants
-  Support the green transition
-  Yield the energy efficiency investments

Source: Market Model 3.0, Danish Energy Agency, 2021

We democratize the role of central reserve power plants, eliminating their CO<sub>2</sub> emissions and channel back the balancing service compensation to the consumers who offer their flexible power consumption

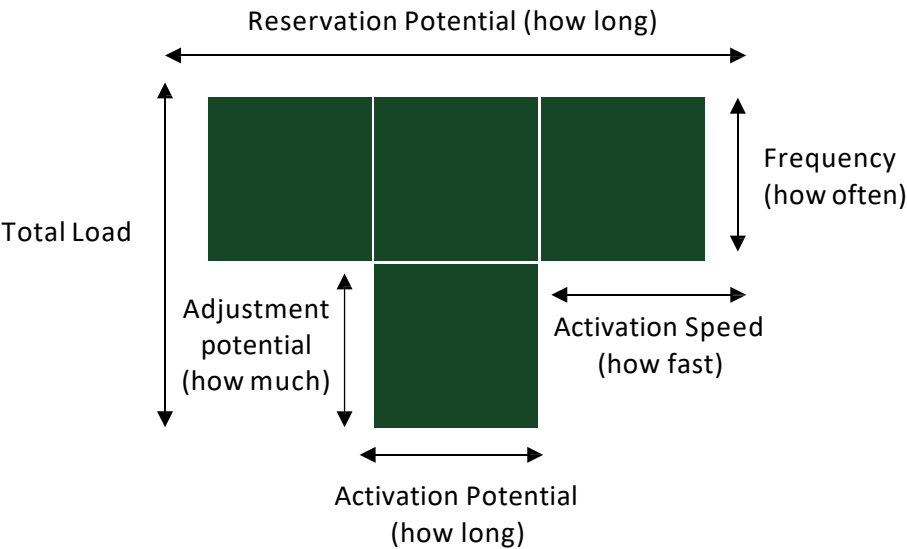


By intelligent instrumentation of assets, electricity consumers can unlock a vast valuable pools of flexibility, participate in the flexibility markets, and earn revenue from their energy assets



We optimize and package consumption flexibility from fleets of assets. The Flex Provider set and govern the Flex Profiles, which defines how each asset is allowed to be traded.

You govern your assets' Flex Profile...



...and we optimize the portfolio



Each asset type  
has its own  
Flex Profile



HVAC system



Heat Pump



Battery



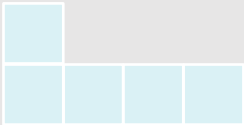
EV Charger



Pump



Rotor/Compressor



Cooling

Vast pools of unlocked flexibility resides in our cities, buildings, factories, electrical vehicles and infrastructures – we are now starting to unlock this potential with the City of Copenhagen

Buildings make up for approx.

**40%**

of our total energy consumption

In buildings approx.

**25%**

of this energy is flexible

### HVAC

Potential: ~30 %

### Pumps

Potential: ~25 %

### Cooling and freezing

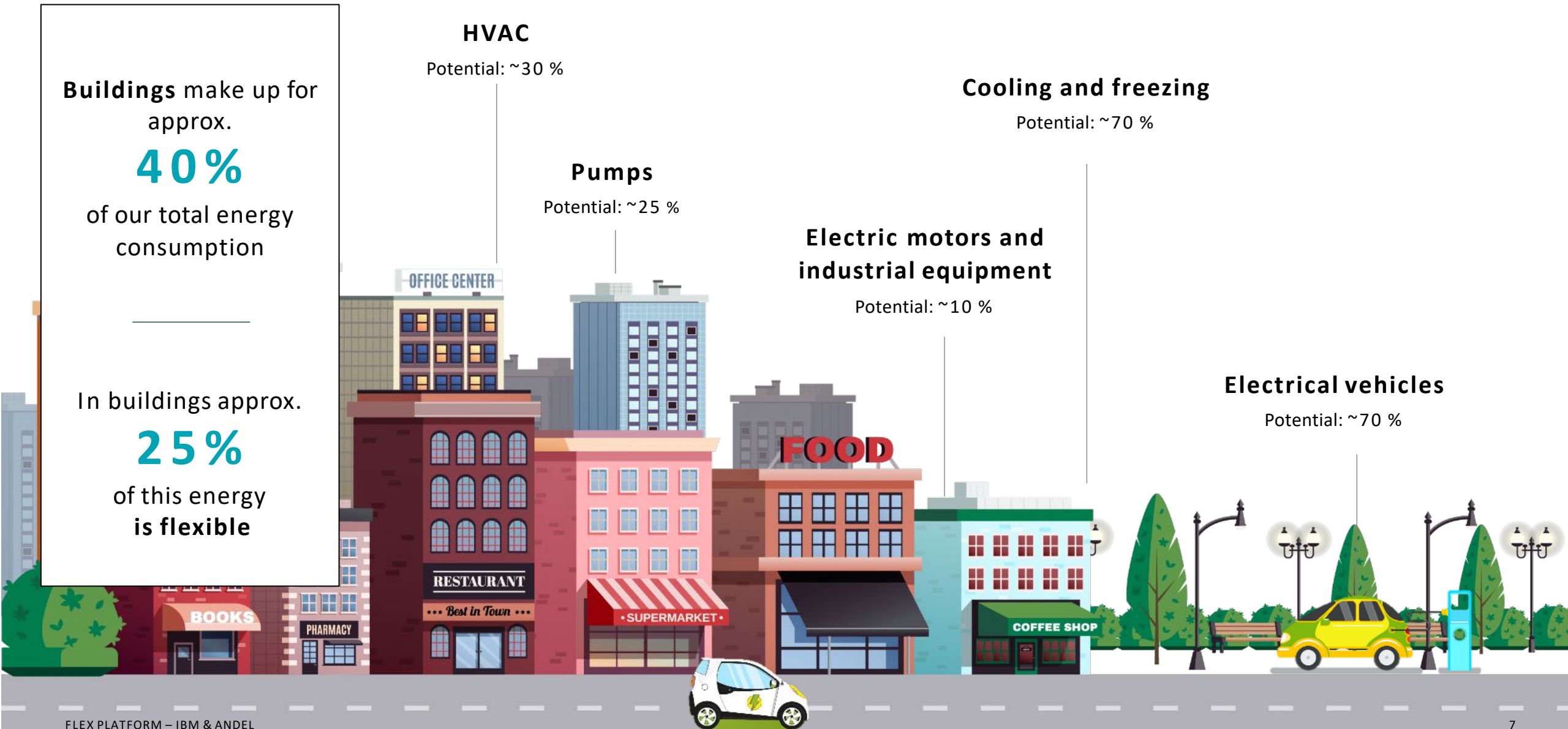
Potential: ~70 %

### Electric motors and industrial equipment

Potential: ~10 %

### Electrical vehicles

Potential: ~70 %





# THANK YOU

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