

Low carbon district roundtable

“Transitioning towards a circular economy”



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the CLIMATE CHALLENGE

CLEAN ENERGY
FUTURE is NOW



NATURE —... LEFT BEHIND

COPENHAGEN
- A STATEMENT
OF DIFFERENCES,
NO RESOLUTION

CONFLICT BETWEEN MAN & NATURE

HISTORY DOES NOT FORGIVE THOSE WHO DELAY

NOT ON
THE POLITICAL
AGENDA

THERE IS
NO SHORTCUT
AROUND
MORALITY

SINCE 1900

EXPONENTIAL CONSUMPTION
DISEASE

TREMENDOUS
ECONOMIC
GROWTH

MULTI-DIMENSIONAL
SOLUTION

MY
STORY

IS ANY INTERVENTION TOO LATE?

HOW DO WE
RE-ESTABLISH
the BALANCE?

G-8, 20, ?...
NOT GETTING IT DONE

A CLIMATE DOCTRINE

MANY BARRIERS

SUSTAINABLE DEVELOPMENT
IS THE RESPONSIBILITY OF EVERYONE.

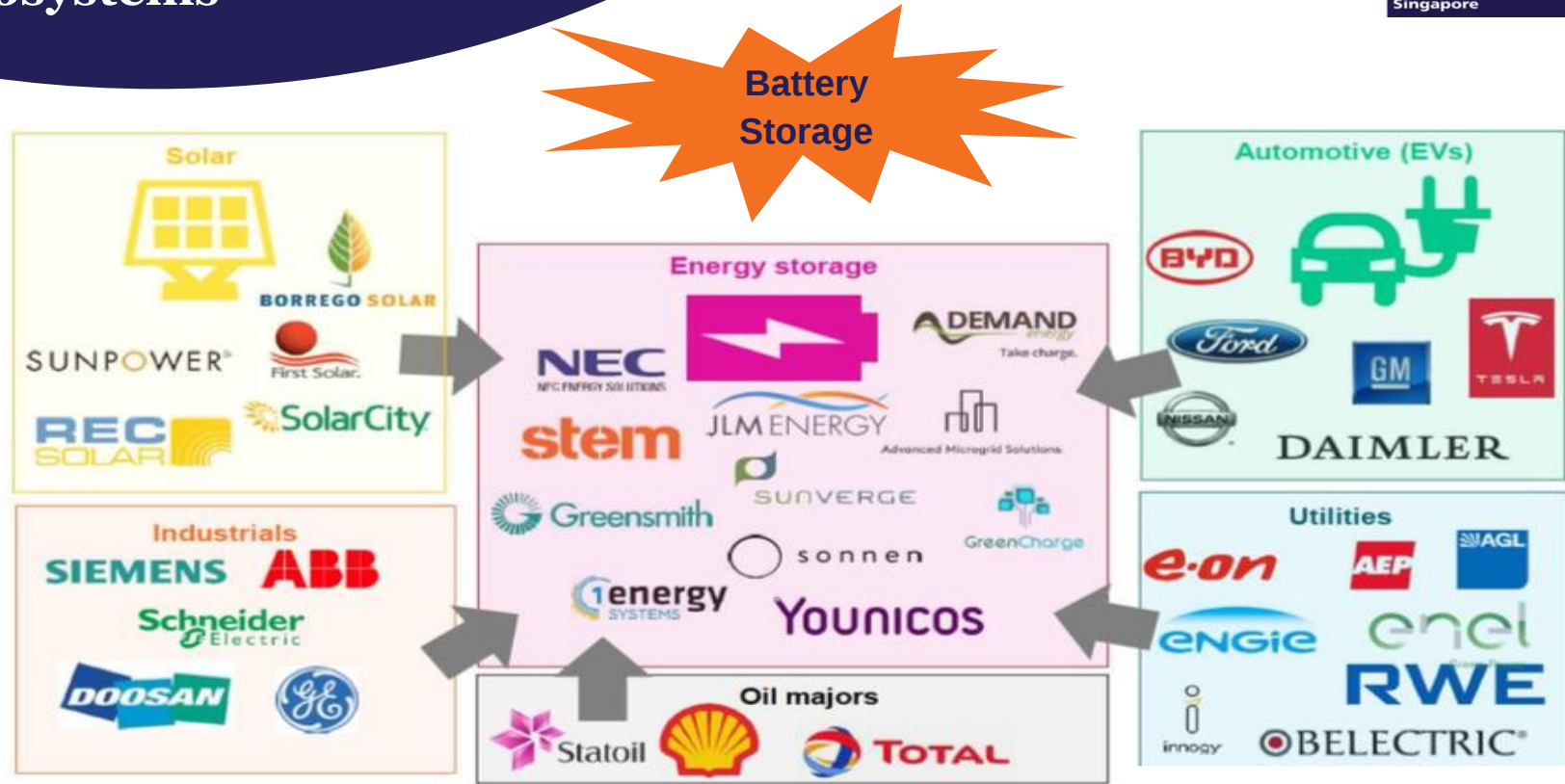
DEATH of ECOSYSTEMS

“Energy in transition”

Some key issues

- ❑ **Geographic shift in energy markets**
- ❑ **A move to cleaner and more efficient uses of energy**
- ❑ **A gradual re-shaping in the energy mix**
- ❑ **The role of technology**
- ❑ **Which are the winner and loser industries or technologies?**
- ❑ **How will emerging policies and targets impact the way we do business?**
- ❑ **Who will pay and how much will it cost?**
- ❑ **What will be their impact on competitiveness?**
- ❑ **How will these reshape trade opportunities?**
- ❑ **What can and cannot be achieved in the short-to-medium and longer term time frames?**
- ❑ **How will this affect jobs, lifestyle and choices?**
- ❑ **What implication for education and skills' development**

Evolving energy ecosystems



De-carbonisation

Decentralisation

Digitalisation

❑ **Instant Everything**

- Fast, simple and effortless is what consumers want. It needs to be on their terms—anytime, anywhere.

❑ **Personalised Interactions**

- Meeting personal expectations is the new now. Consumers want personalized interactions and experiences that align with their lifestyle.

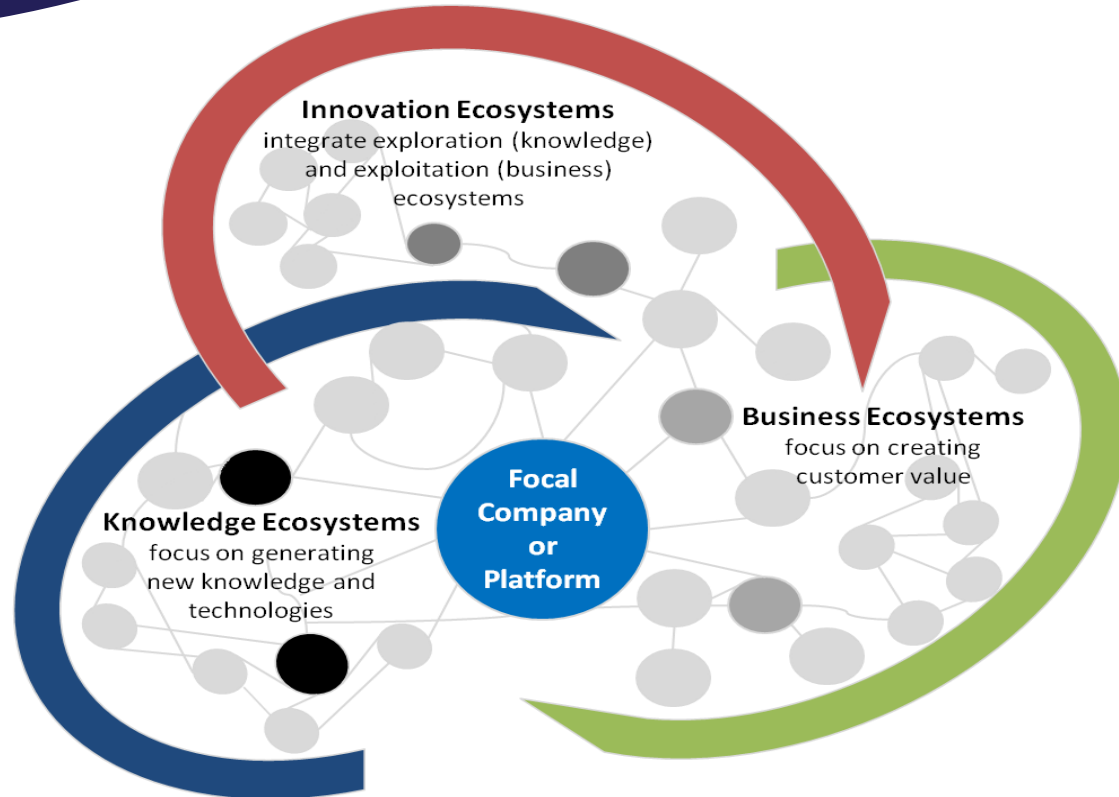
❑ **Meaningful experiences beyond simple brand value**

- Purchases are now an expression of who you are and what you value. Intangible branding is now key, going far beyond product value.

❑ **Collective consumption**

- New ways to share products and services without the burden of ownership are now welcome. It is about trust, community and collaboration.

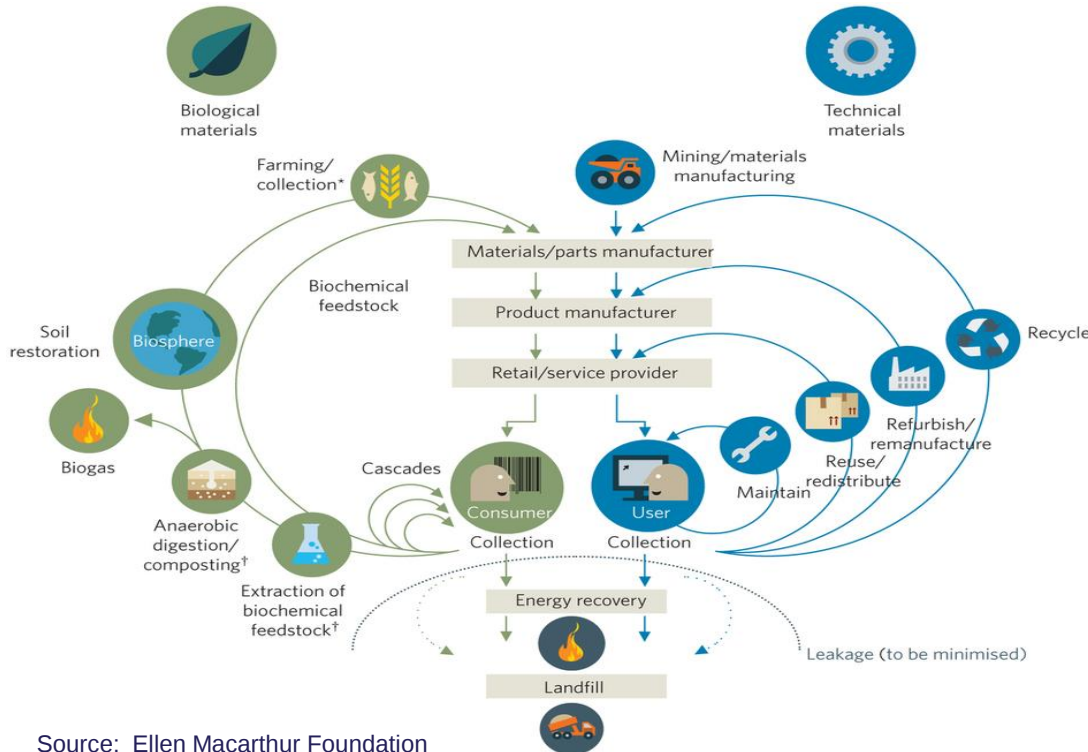
3 fundamental ecosystems that “make things happen”



The principles of a circular economy



Ellen Macarthur's “Butterfly” Diagram



Source: Ellen Macarthur Foundation

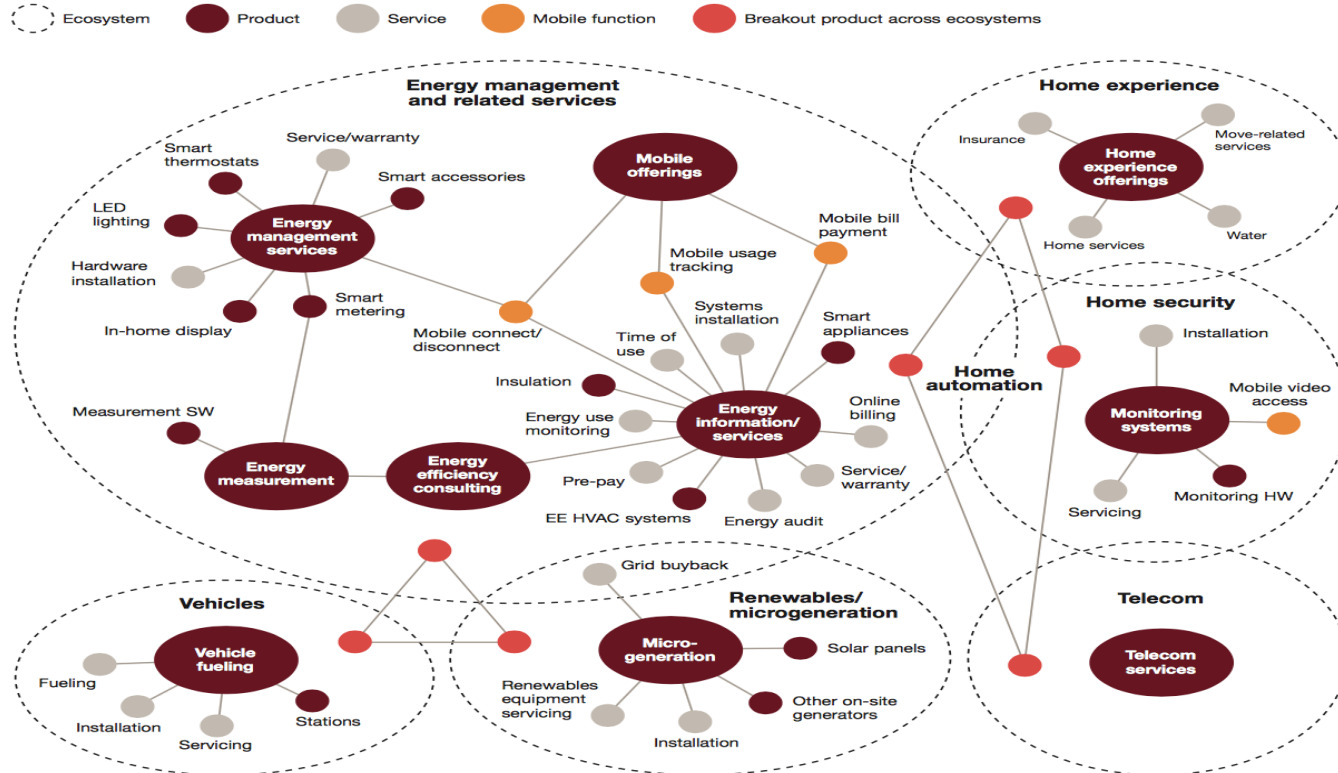
4 Key Principles

1. Optimised use of resources through efficient regeneration where possible
2. Dynamic markets allowing optimal use and access to products
3. Increased product lifespan through design
4. Linked value chains that minimise waste of energy and resource

4 Key Technical Product Cycles

1. Maintenance
2. Reutilization / redistribution
3. Upgrading / re-manufacturing
4. Recycling

The distributed energy ecosystem



Summary of the key issues of today

❑ Clean and Green and Energy

- It's not only about renewables.
- “Energy Efficiency” is emerging as the most critical element towards helping our region to meet its growing energy needs in a clean, effective and above all sustainable way.

❑ Energy Access, Reliability & Affordability

- Access to modern, cleaner energy is essential to human development.
- The majority of the world's energy poor are living in Asia and the Pacific. More than 700 million people in the region have no access to electricity and almost two billion people burn wood, dung, and crop waste to cook and to heat their homes.

❑ Energy Sector Governance and Reform

- establishing competitive electricity markets, adopting market pricing mechanisms and regulating monopolies
- encouraging private sector participation, particularly public-private partnerships, financing mechanisms
- supporting research, legislation, technology development, and regulation
- adopting tariff and taxation structures to promote energy conservation
- training in energy planning, demand forecast, financial management, operations and maintenance of assets, and economic assessment