BUSINESS FINLAND

SMART ENERGY ECOSYSTEMS AND TEST PLATFORMS

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Nordic views on NEW ENERGY STORAGE technologies
Copenhagen 19.9.2019

Smart Energy Program 2017-2021

Responding to the challenge of climate change

Contributing to the transformation of the energy sector

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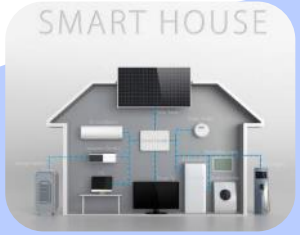
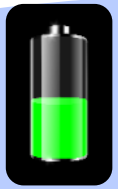
Actions

SMART CHARGING OF ELECTRIC VEHICLES



SMART HOMES AND PV



ENERGY STORAGE

POWER TO GAS

BALANCING

MICROGRIDS, ENERGY COMMUNITIES

AGGREGATOR

Ecosystems
Test Platforms
Pilots and Demonstrations

ADVANGED MONITORING

DISTRIBUTION AUTOMATION

CONTROLLABLE LOADS AND ENERGY EFFICIENCY

SYSTEM MANAGEMENT AND DESIGN

MARKET DESIGN

Ecosystems

Smart Otaniemi

Innovation Ecosystem - Smart Otaniemi aims to solve systemic challenge - the biggest question of smart energy

Smart Energy Åland

100% Renewable Island

An integrated renewable energy system with sector coupling and system integration in focus

Batteries from Finland

Blue Electrification

Power to X to power and products

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Test platforms in Finland

- Smart Otaniemi
  - Unique place with innovation environment, VTT's research centre and Aalto University campus
  - Startups
  - 5g network
  - Students as consumers
  - Living lab with real customers involved
  - Developing and demonstrating system-level solutions
  - Legislation and market models supporting transition
- Åland Islands
  - Society scale, comprehensive but small enough
  - Excellent wind and solar conditions
  - 60% renewable with now decided investments
  - Self-governed
  - Full society of 30 000 citizens
  - Readiness up to 125 % RESe
  - 0.5% of Finnish GDP, electricity consumption, population etc.

BATTERIES FROM FINLAND

Business Finland is starting to build multibillion business ecosystem in the field of batteries

BATTERY VALUE CHAIN IN FINLAND

LEADING COUNTRY IN SUSTAINABLE PRODUCTION OF RAW MATERIALS

Finland is the only significant European producer of raw materials for electric vehicle batteries.

EXCELLENT PLATFORM F0R COMPONENT AND CELL MANUFACTURING

Finland offers an compelling location for companies aspiring to meet the growing European demand for battery components and cells.

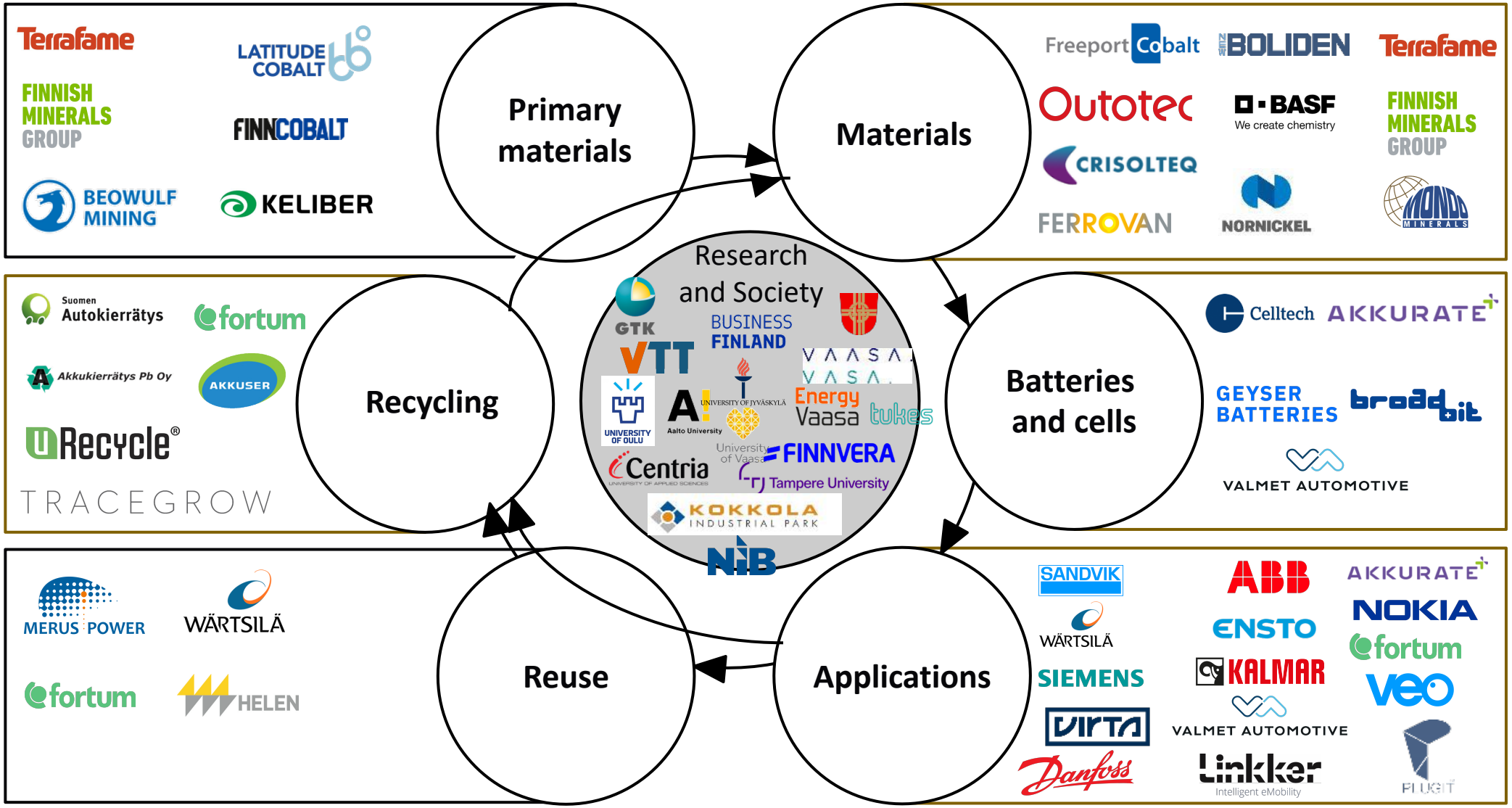
INNOVATIVE APPLICATIONS AND WIDE ECOSYSTEMS

Finland is globally known for its innovation and low carbon solutions for energy sectors.

FORERUNNER ON RECYCLING

As proof point of our competences EU has given Finland leading role on battery recycling research.

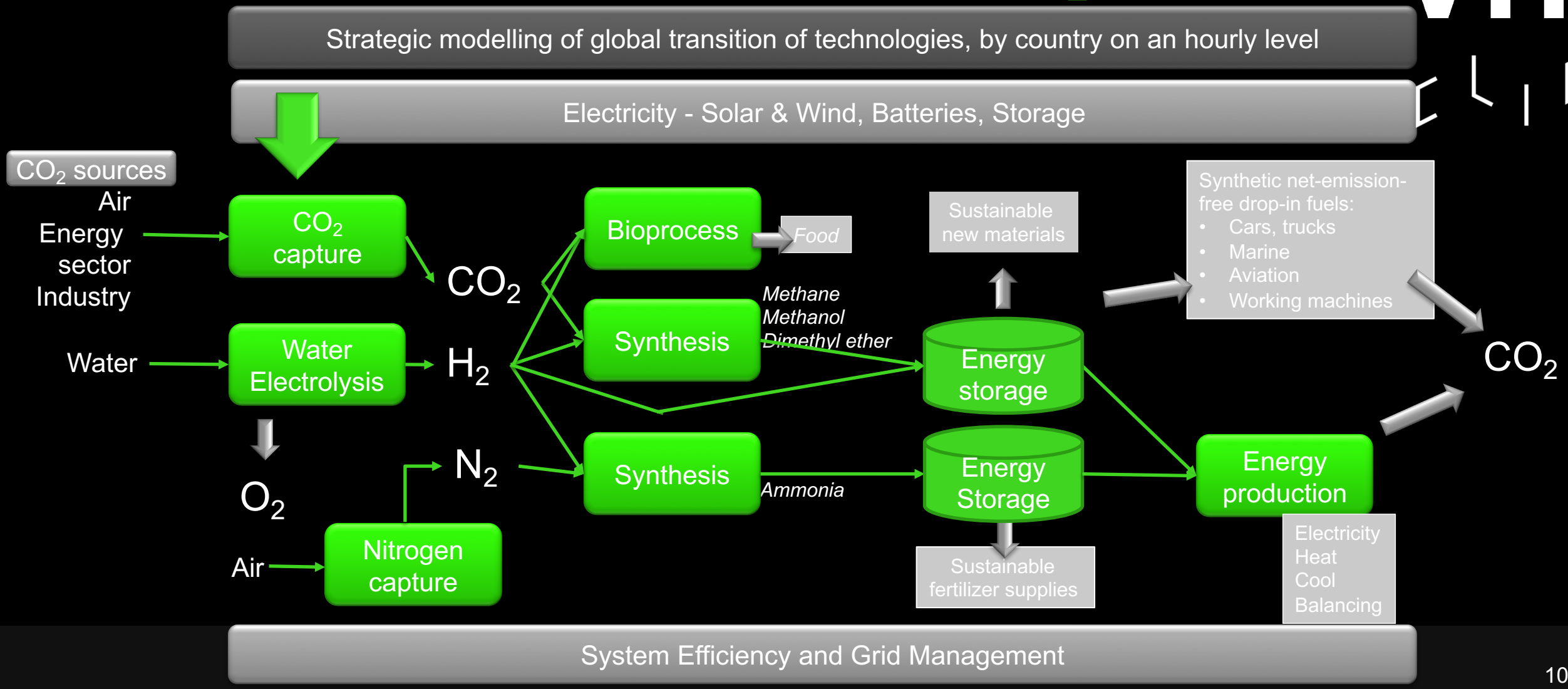
BATTERY VALUE CHAIN



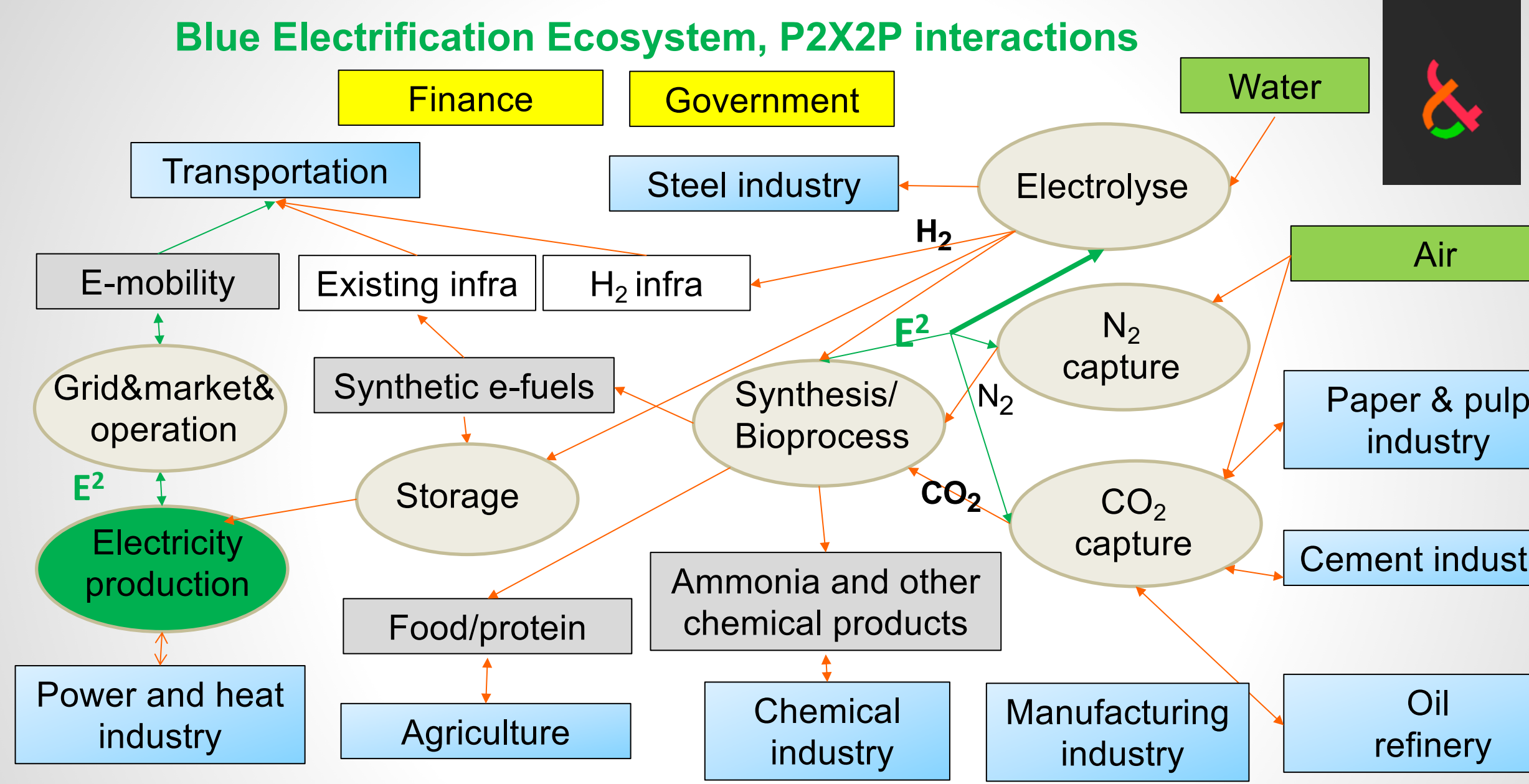
“Blue Electrification”
“NeoCarbon 2.0”

Transforming energy markets
Creating emerging markets

Renewable energy developments by controlled exploitation of CO_2 cycles



Blue Electrification Ecosystem, P2X2P interactions




Thank you!