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Knowledge Innovation Community

EUROPEAN BATTERY ALLIANCE | EBA250

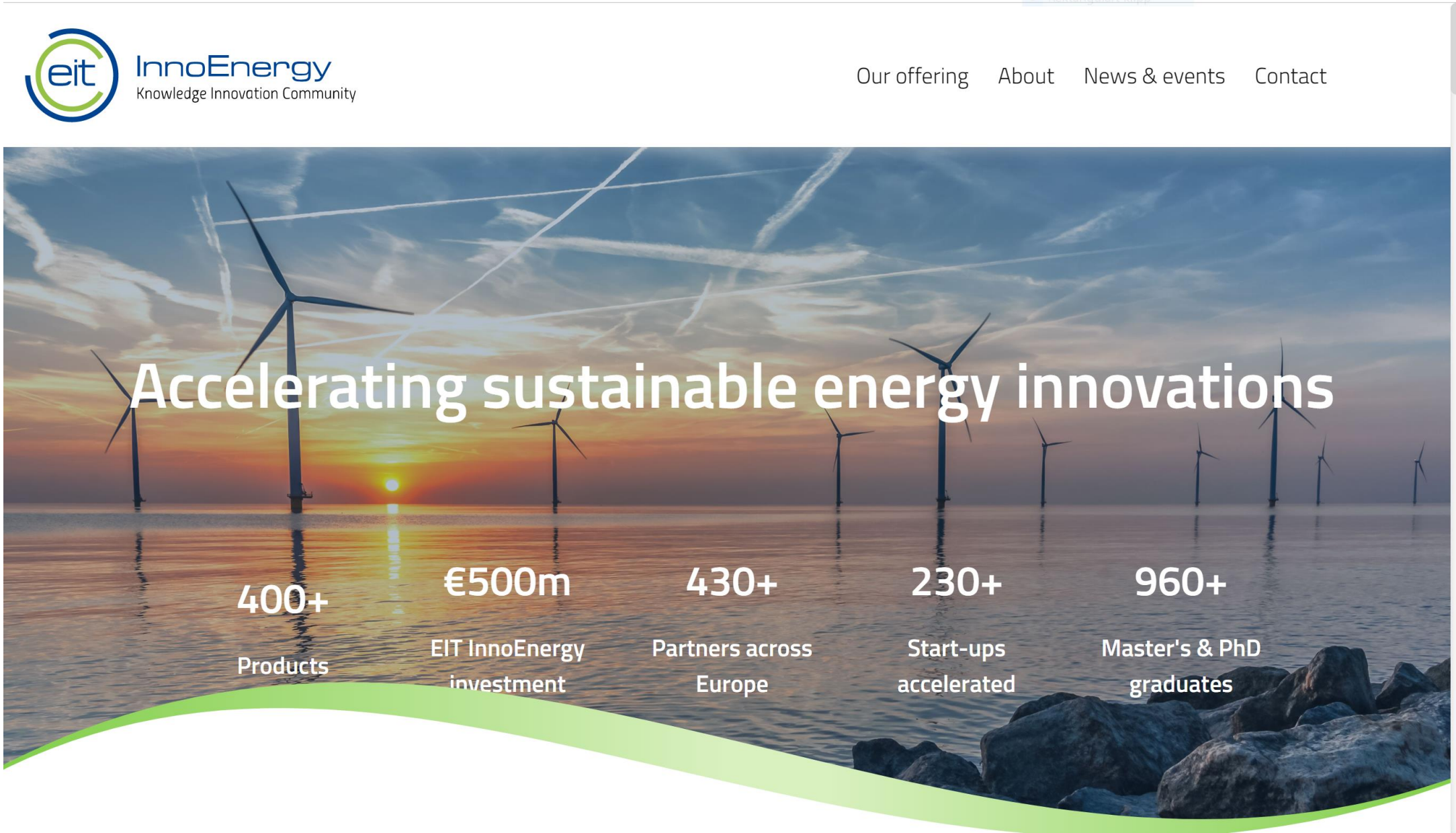
IEA Workshop ETP-2020

"Accelerating Clean Energy Innovation"

Dec 2019

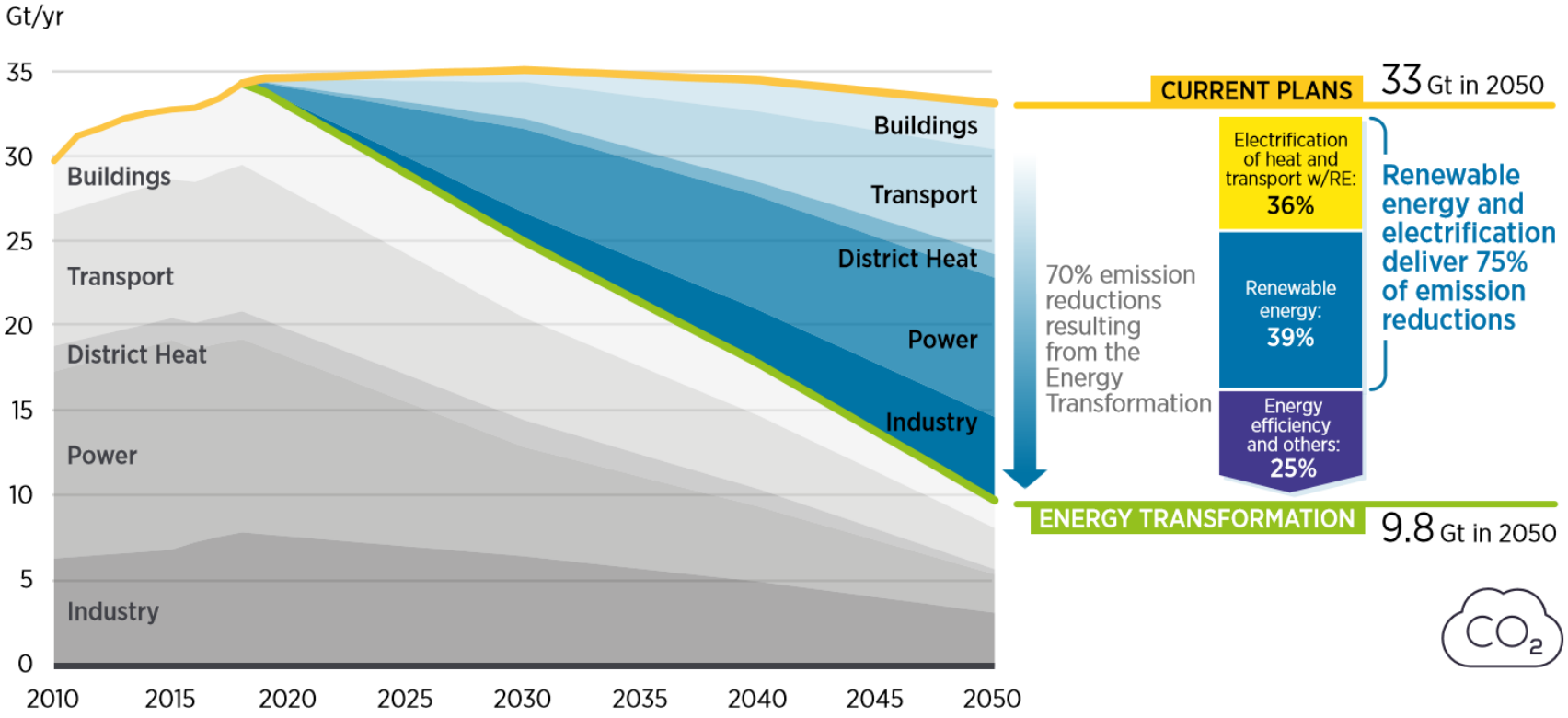
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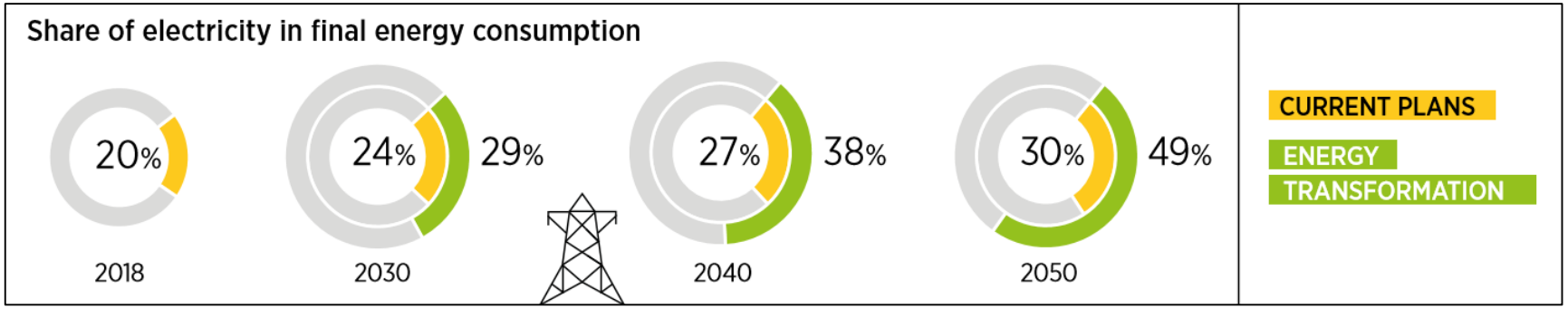
Industrial Strategy Executive


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Accelerating sustainable energy innovations
400+
Products
€500m
EIT InnoEnergy investment
430+
Partners across Europe
230+
Start-ups accelerated
960+
Master's & PhD graduates

Main technology trend, electrification

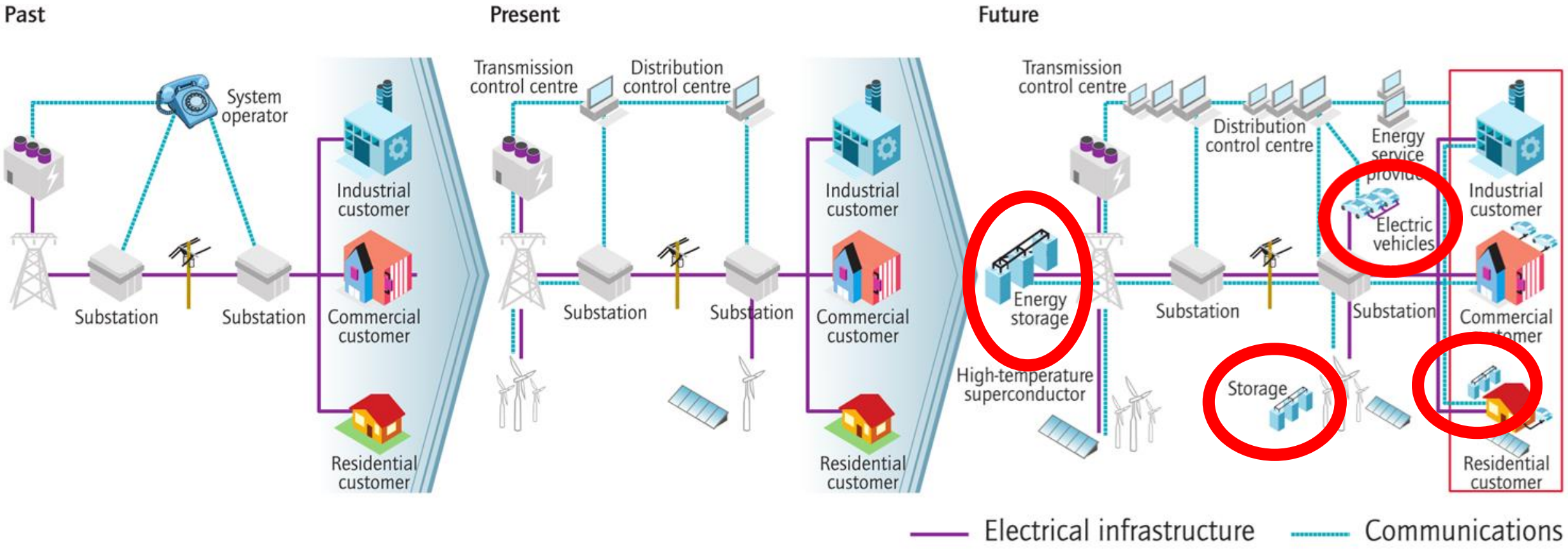
Figure 1.1: Annual energy-related CO_2 emissions and reductions, 2010–2050





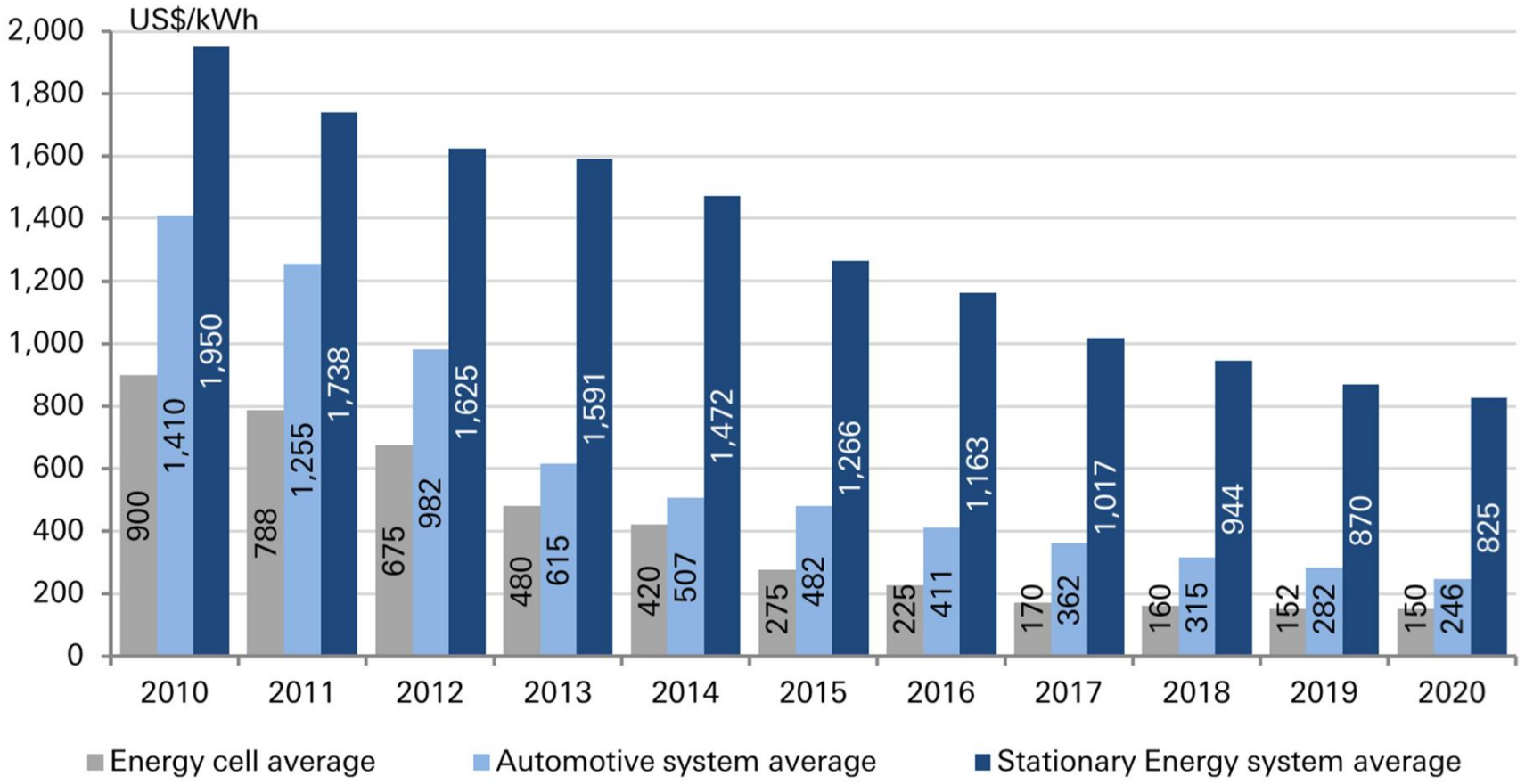
Transformation of Power System

Energy Storage, Sector Coupling



Battery prices

Why would stationary batteries cost 2 – 3 X ?



Source: Cairn ERA Advisors

Battery prices

Cost 700 $ / kWh including car…



But electric cars could mean more…

Power Convertors , Electric Motors,



Technology transfer from small to big







Power convertors

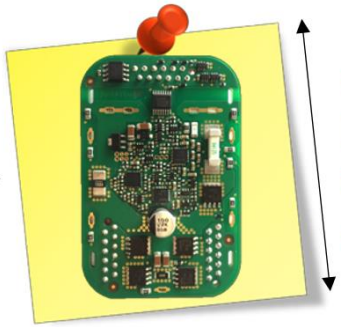
Technology transfer from big to small

instagrid has taken the largest power converters of the world and made them portable and low cost



>10^6 size reduction

~10^9 weight reduction



- Low-cost consumer parts
- Passive cooling
- High efficiency (>99%)
- Small passives

EBA Stakeholders along the value chain charging the European Battery Alliance; Innovation by working along the value chain

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Raw materials

- EIT Raw Materials
- Leading Edge Materials
- Finnish Minerals Group
- European Copper Institute
- EUROMINES
- European Metals Holdings
- Magnis /Allocate
- Prince Erachem
- Aura Energy
- Gov. of Western Australia
- Cobalt Institute
- Fennoscandian Resources
- Infinity Lithium
- Copperalliance
- Finnish Network for Sustainable Mining
- Albemarle
- European Lithium
- Crisolteq
- Trafigura
- Rio Tinto
- GTK
- Outotec
- Aurubis
- FLSmidth
- Keliber
- DERA
- KGHM
- Boliden
- Eramet
- Cobat

Active Materials

- Nanomakers
- 3M
- Elkem
- Umicore
- Imerys Graphite & Carbon
- Solvay
- LOTOS
- BASF
- Arkema
- SGL Group
- Heraeus
- Nanomakers
- Wacker Chemie
- OXIS Energy
- Phillips 66
- Evonik
- Tribotecc
- Höganäs
- RGS Development
- Nawa Technologies
- Grupa Azoty
- EMIRI
- Ganomat
- Leyden-Jar

Battery Manufacturing

Machinery

- Tata Steel Plating
- Freudenberg
- Manz
- MW group
- Thyssen Krupp
- PEC
- FAAM FIB srl
- MG Energy
- Honeywell
- ABB
- Coperion
- EV Battery
- Akkurate
- Delfort
- Videoton
- EoCell Inc
- CAEC
- EM Microelectronics
- Cleantron
- Skeleton
- Gestamp
- Passion Motorbike Factory
- Vaisala
- CEGASA
- Tungsram
- Gestamp
- Swatch Group
- Clean Power Technology
- Renata Batteries

Cells

- Akasol
- Saft
- KLIB
- Northvolt
- LION Smart GmbH
- LION E-Mobility AG
- CustomCells
- EAS Batteries
- Terra E
- Lithops
- Leclanché
- Liacon
- Electrovaya
- Litarion
- Varta
- Hoppecke
- Envites Energy
- Dassault Systems
- Forsee Power
- NXP Semiconductors
- HE3DA
- MES
- Blue Solutions
- BMZ
- Innolith
- Edge
- Schäffer AG
- BELENOS

Packs

Systems

Application & Integration

E-mobility

- Sonnen
- BMW
- FIAT
- FCA - EMEA
- Centro Ricerche FIAT
- Daimler AG
- Volkswagen
- Renault SA
- NISSAN Automotive
- PSA Groupe
- Jaguar Landrover
- Epiroc
- TESLA
- Ford
- VolvoCars
- Volvo
- ElringKlinger
- Continental AG
- Bosch
- Siemens
- Stihl
- Husqvarna
- Honda R&D Europe
- Danfoss
- Viessmann
- Streetscooter
- CNH Industrial
- FPT Powertrain Tech

ESS

Ind. applications

- OIG
- AmbiBox
- VESTAS
- Portliner
- RIMAC
- Ampere Energy
- Einride
- Cargotec
- Cummins
- Rafako
- ENEL
- TERNA
- EDF
- ENEDIS
- Innogy
- Red Electrica Espana
- cyberGRID GmbH
- Albufera Energy Stor
- Total
- Vattenfall
- PKN ORLEN
- EDP Inovacao
- AMPS Power
- Fortum
- CAF
- Nordex
- Alpiq
- TOYOTA Tsusho EU

Recycling & 2nd life

- Veolia
- Suez
- Revatech
- EBRA
- RECHARGE
- Stena metall
- Stena Recycling International AB
- AkkuSer
- Interseroh
- Bee Planet
- ARN
- envirobat

Research and associations active in all parts of the value chain

- Fraunhofer
- Inst. Chem. Slovenia
- Munster Uni
- smartEN
- MCI
- DENA
- CEA
- Innovate UK
- CIC
- DNV GL
- Valuad
- GART
- SINTEF
- Faraday Inst
- TU Braunschweig
- TUV SUD
- AVERE
- Business Finland
- AIT
- Uppsala University
- Aalto Univ
- AVL
- ADS
- VASEK
- VITO
- VUB
- ERRIN
- RISE
- BVES
- GigaVaasa
- ENEA
- CEPS
- EASE
- ifu
- A3PS
- Amiens
- AVL ITALIA
- UTBM
- EUROBAT
- CEFIC
- Zabala
- Invest in Lithuania
- CNR
- FEMTO
- T&E
- VDMA
- AMMA
- RVO
- Politecnico Milano
- INSTM ITALIANO
- EUCAR
- VDE
- VG-Colab
- Not innovated here
- RSE
- CIDETEC
- EGVIA
- CEN/CENELEC
- TNO
- ANIE
- ACEA
- CATCH
- SFEM Storag
- Instituto Tec Energia
- CLEPA
- ECOS
- CEEP
- Federchimica
- Austrian Ministry

Bo Normark
Industrial Strategy Executive

bo.normark@innoenergy.com

+46 70 608 8020



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