

RADICAL INNOVATIONS GROUP

**Digitalisation and Decentralisation for
Decarbonising Nordic Transport – D³N**

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natural resources



CLEAN
CIRCULAR
ECOSYSTEMS

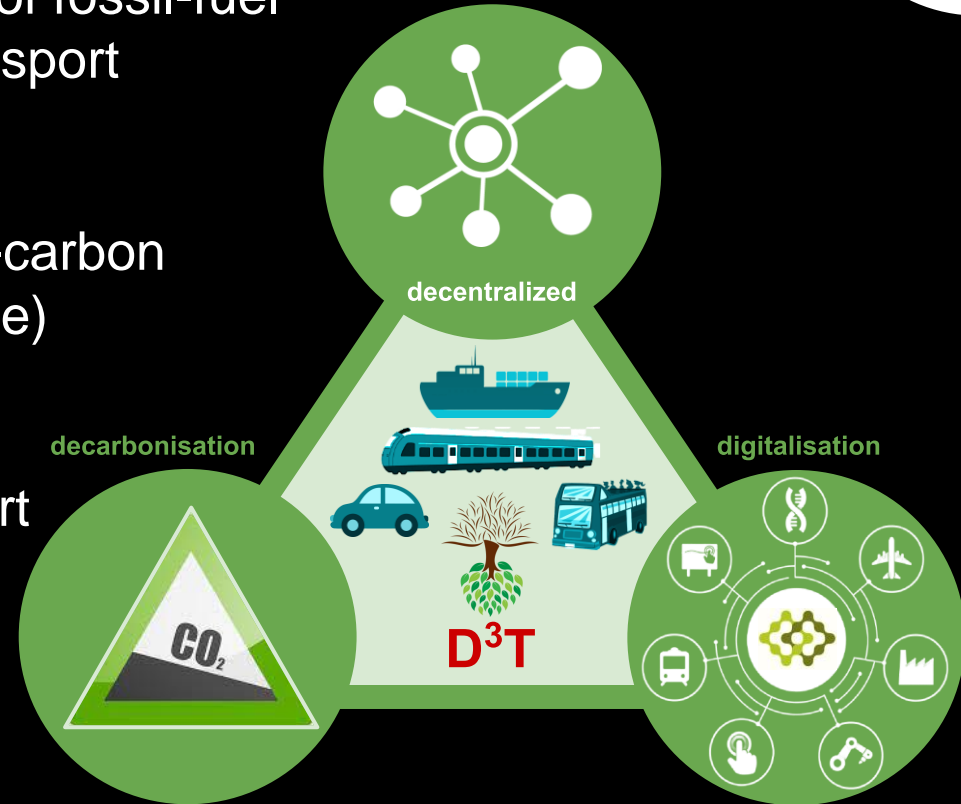
energy

transport



3 pain-points (goals) regarding transport decarbonization

- strategically reduce overcapacity of fossil-fuel vehicles, especially in private transport segment,
- efficiently integrate low- and zero-carbon transport solutions with (renewable) energy ecosystems, and
- systematically map entire transport ecosystem to monitor carbon footprint at different levels.



D³N is based on 3 building blocks, namely,

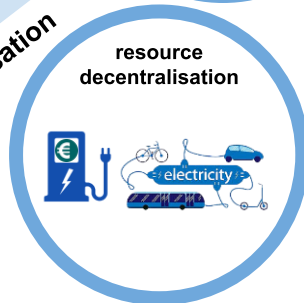
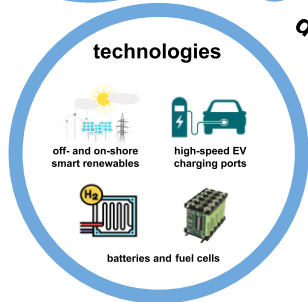
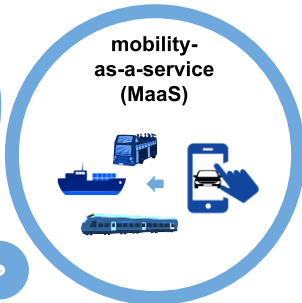
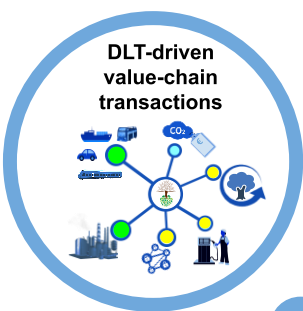
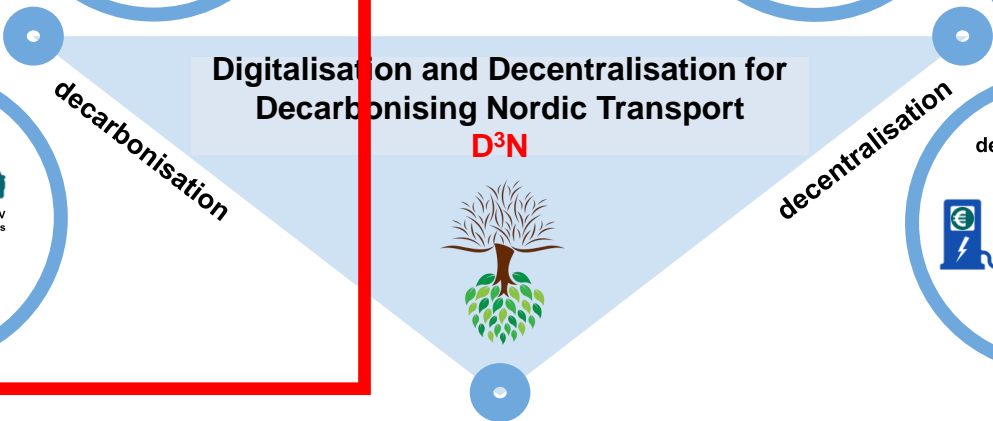
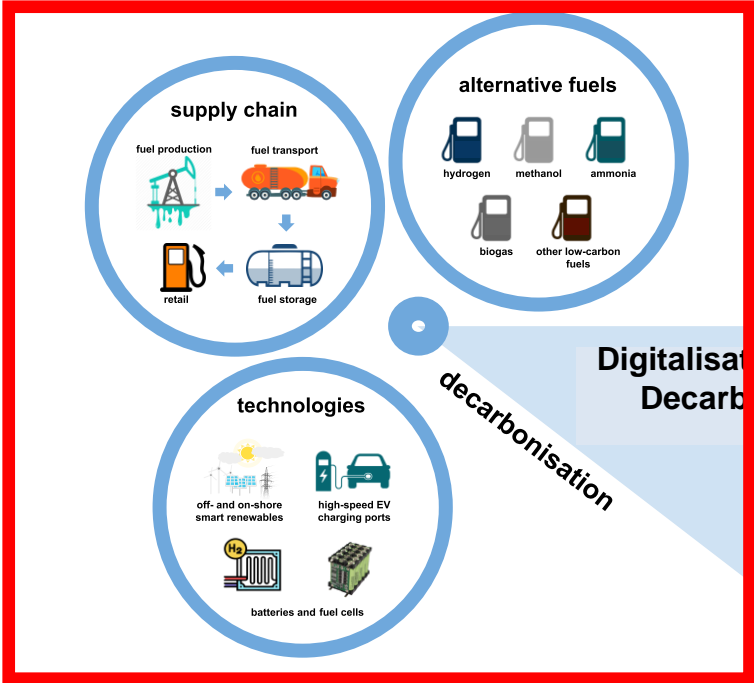


Resource Decentralisation

Process Decentralisation

Digitalisation (Digital Twinning)

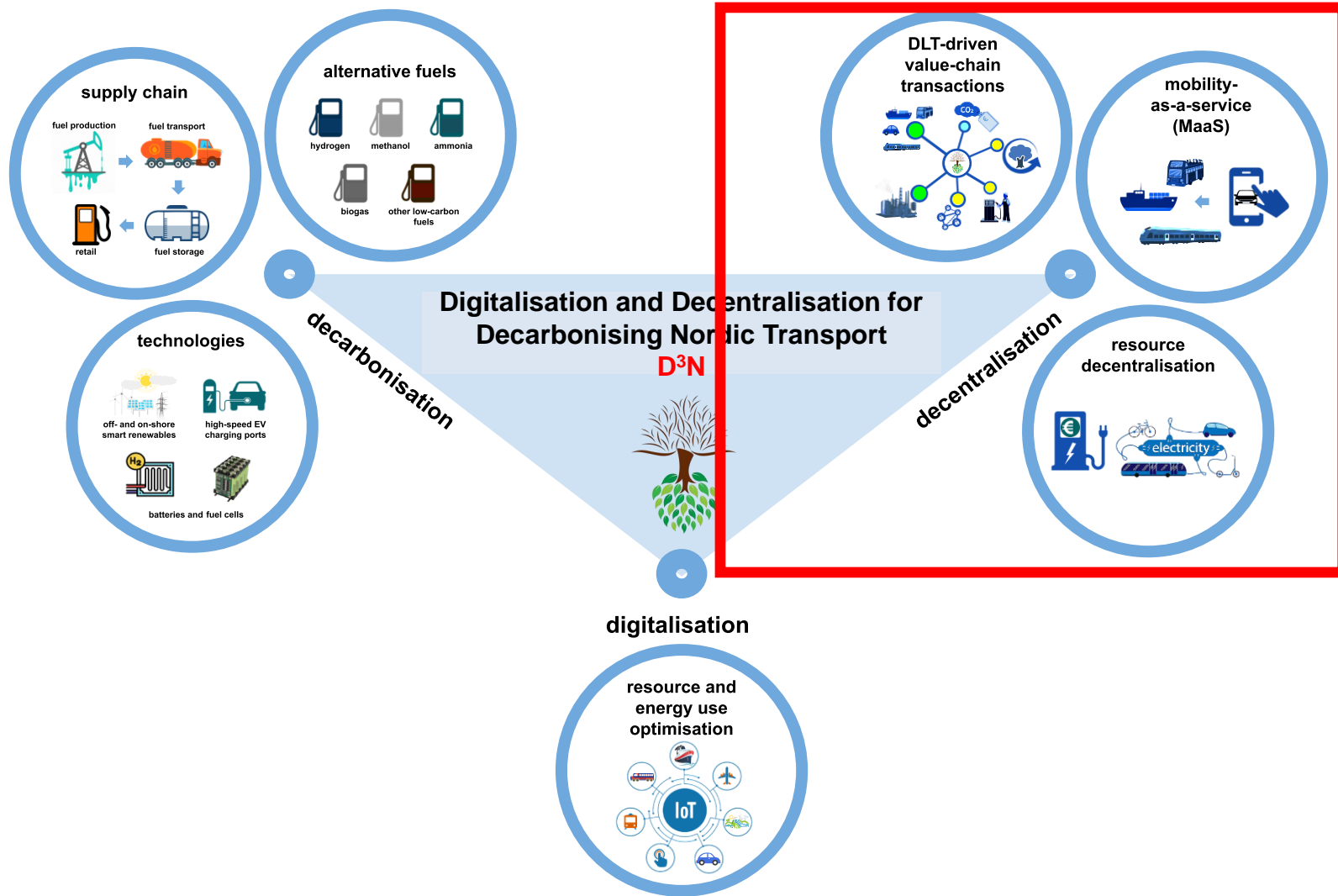
Internet of Transport





We are able to **connect actors across the supply chain** from renewable energy fuel producers to technology providers, government authorities & regulators, investors, and vehicle operators.

Thanks to the increasing network of renewable energy generating assets **our D³N solution could be easily integrated to existing assets**





Resource decentralising helps in **moving from single to multiple options** for the mode of transport, recharging, fuelling, etc.

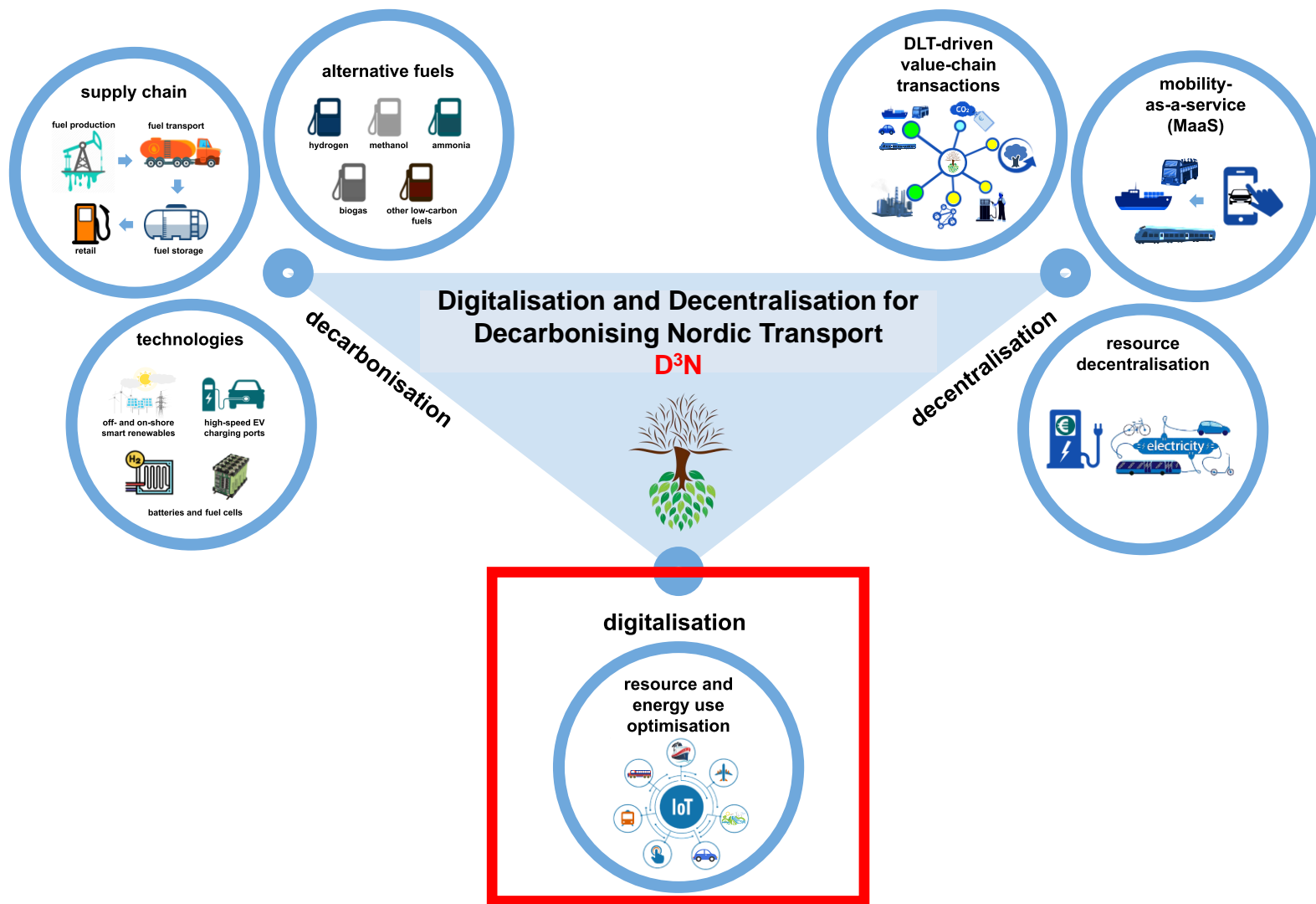
Renting and sharing transport assets
can become a viable option across
Nordic region seamlessly like we
book Airbnb or Uber.



DLT-based processes can

increase efficiency of grids by
integrating more decentralized
renewable energy sources.

guarantee data credibility, privacy,
and security for actors across the
supply chain.

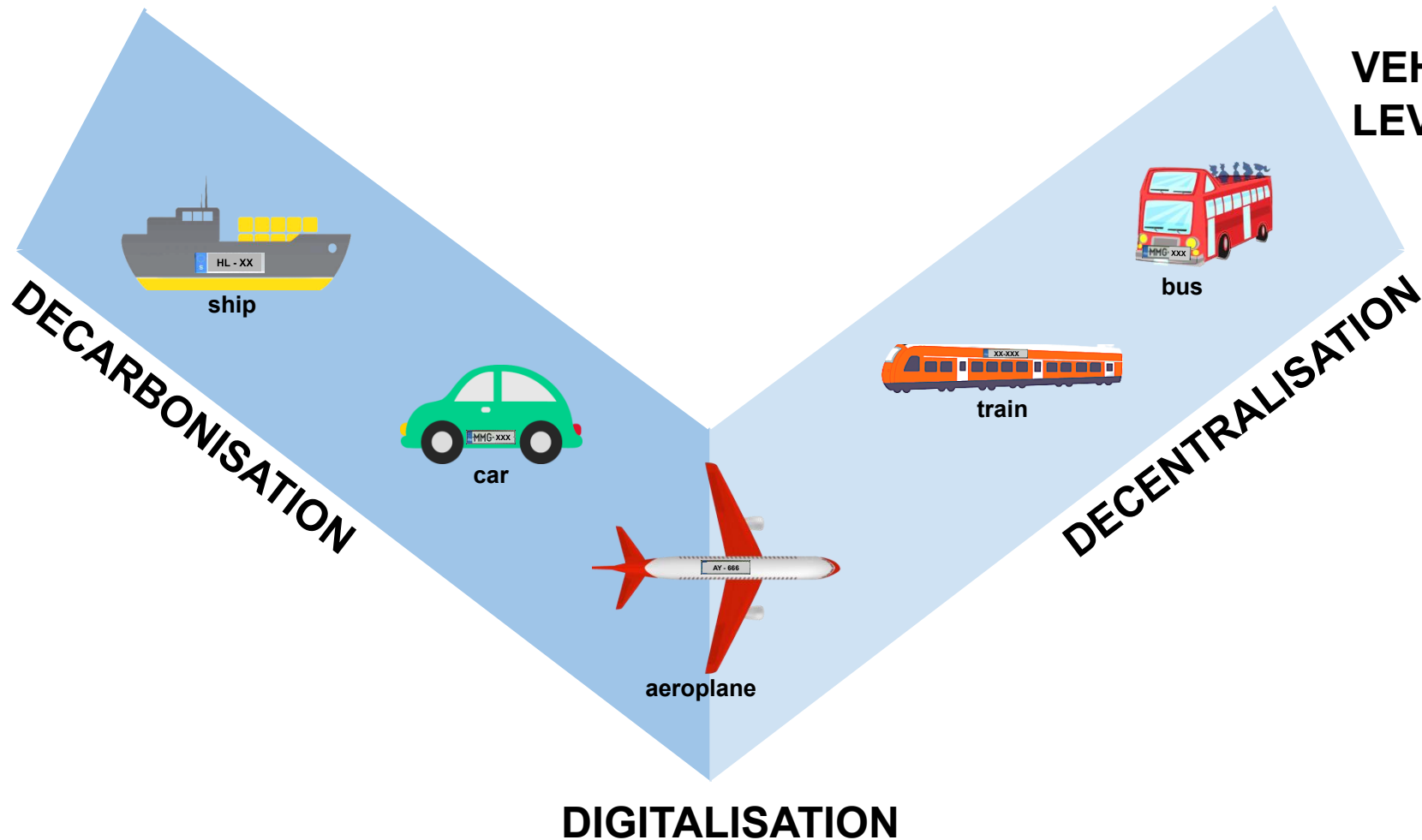




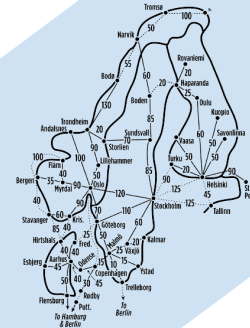
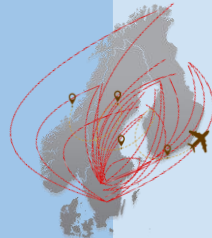
Through our **D³N**, we aim to enable individuals, companies, smart devices, vehicles, and assets including battery systems in the Nordic region to interact and transact directly

**Digital orchestration at a scale that
has never been done before.**

VEHICLE LEVEL



INFRASTRUCTURE LEVEL



TOWN / CITY LEVEL



Stockholm



Oslo



Copenhagen

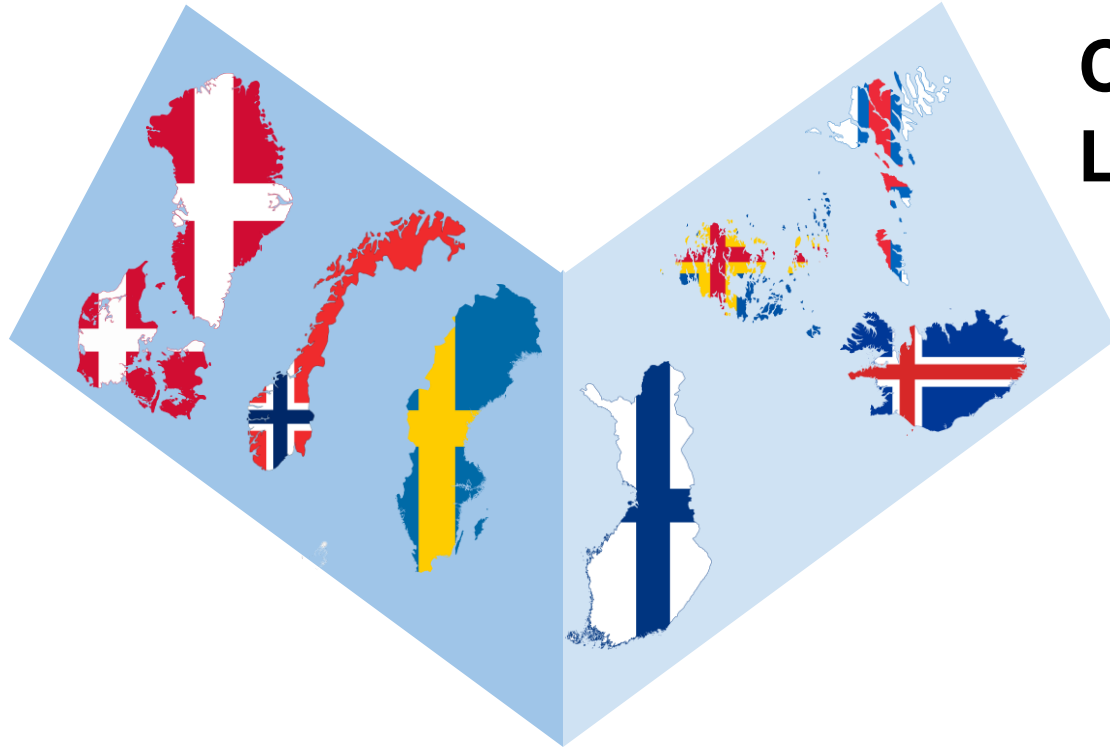


Helsinki



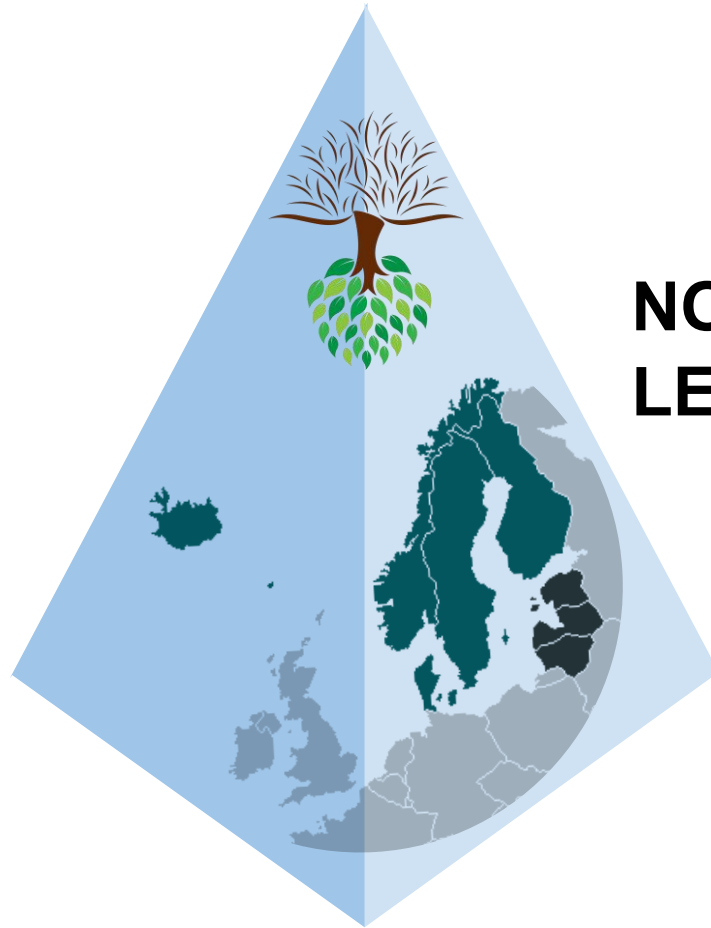
Reykjavik





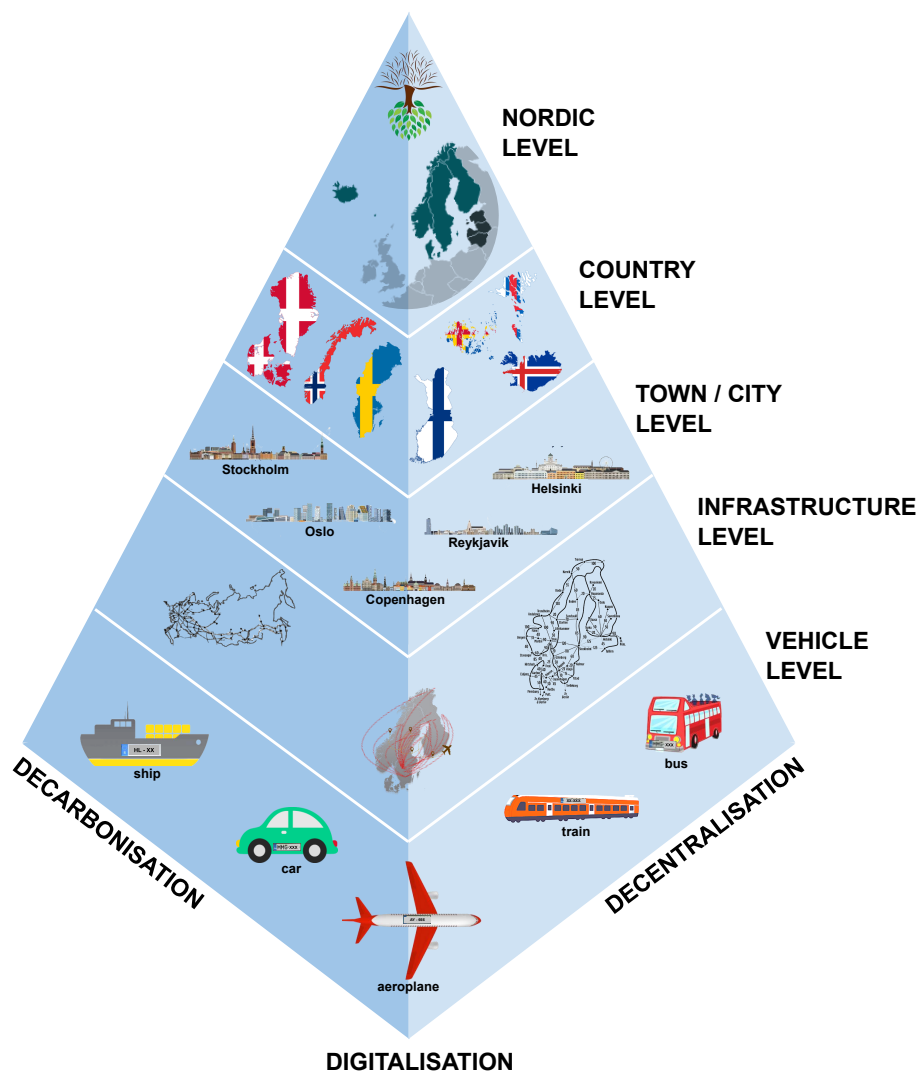
COUNTRY LEVEL





NORDIC LEVEL





Through D³N, we can

identify and avoid **double-counting of
carbon credits**

bring **transparency** to environmental
measures such as reforestation or
conservation projects





track carbon footprint from origin through
every stage of transaction at different levels

typical smart using our **D³N** contracts

fuel type

vehicle ID

time & location

energy, water and other raw material footprints

smart contract ID : S11B5C101

source: blue hydrogen

type: CO₂ partially compensated

carbon footprint: 140 g CO₂-eq / kWh

quantity: 1 tonne

quality compliance: complete

issues: none

lot ID: 21

price / tonne: EUR 10 000

raw material origin: Finland

process: water electrolysis with non renewable energy

order type: trial

digitally signed by - Narendra Shah

company - CAA International

last hash: 555666447e2279b81466302b492c4b5f

hash: 72daeb34706218326822d19bfa1a326d

date & timestamp: 05.05.2021 15:40:45



smart contract ID : S11B5C101

fuel type: green hydrogen

vehicle ID: EVF-910 (FIN)

quantity: 30 kg

time & location: 14:32:53 Vaasa HFS-X17

carbon footprint: 140 g CO₂-eq / kWh

water footprint: 300 g H₂O-eq / kWh

raw material footprint: 1000 g H₂O-eq / kWh

price / kg: EUR 10

raw material origin: Finland

process: water electrolysis with non renewable energy

order type: trial

digitally signed by - Narendra Shah

company - CAA International

last hash: 555666447e2279b81466302b492c4b5f

hash: 72daeb34706218326822d19bfa1a326d

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TACK SÅ MYCKET – MERCI VIELMAL



TEDx Talk – Risks, Excuses, and Transformation

https://www.youtube.com/watch?v=oerPAgq0P_4&t=5s

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2020 Mission Innovation Champion Award:

<https://www.michampions.net/meet-the-champions>

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