

# Buildings as carbon sinks

We make people more productive in  
offices and turn CO<sub>2</sub> into renewable fuels.

**Petri Laakso**

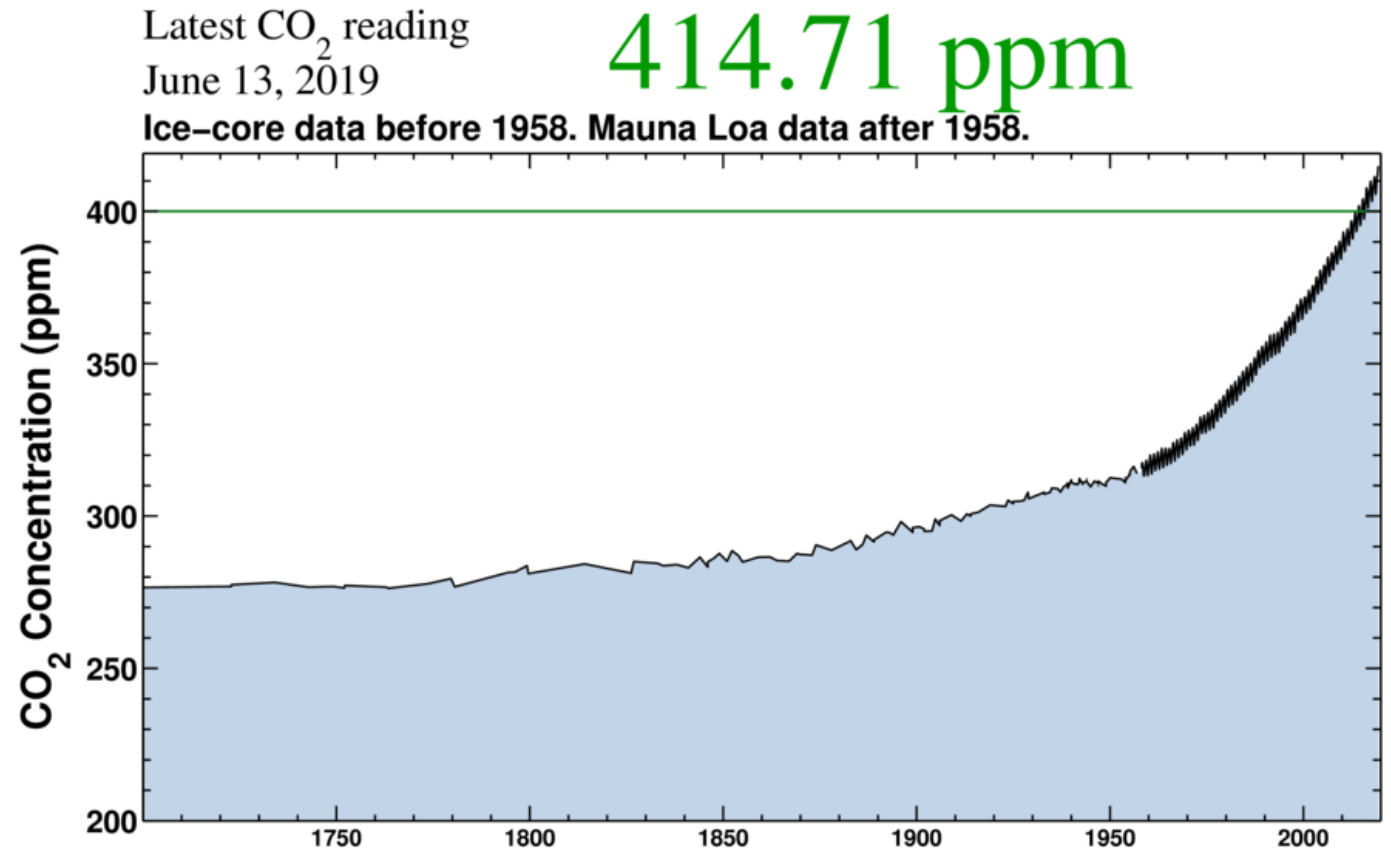
29.1.2021



# THE CHALLENGE

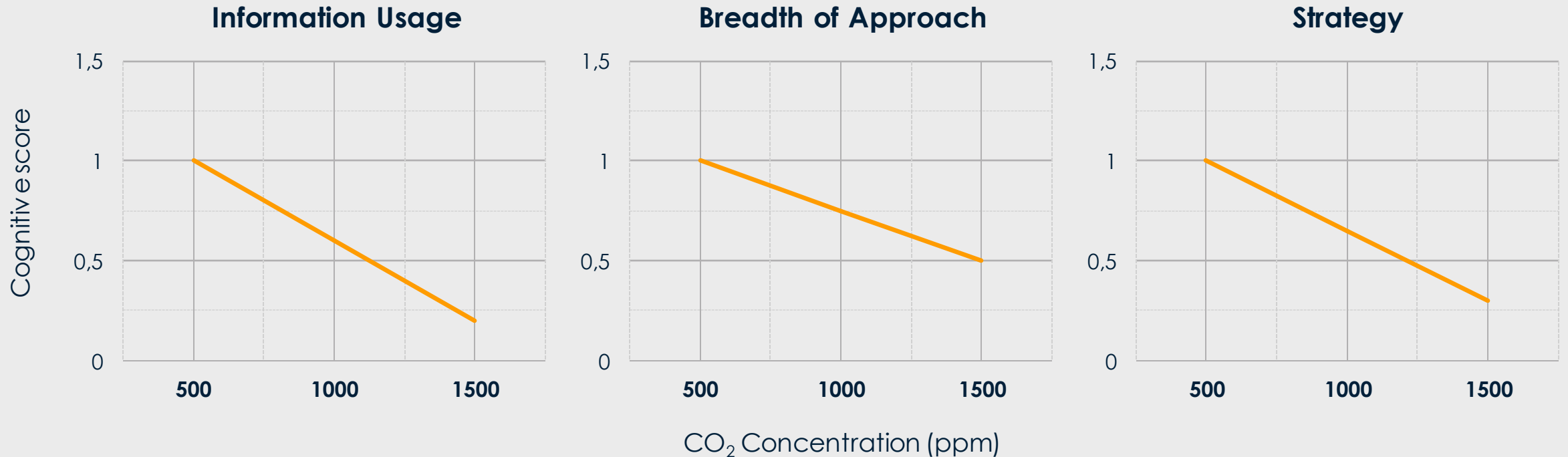
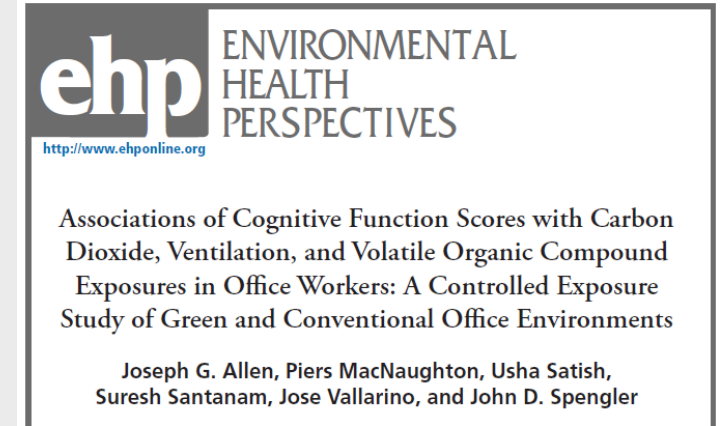
# CO<sub>2</sub> emissions must be cut fast

- Complying with the Paris agreement require carbon neutrality or even negative emissions
- When outdoor CO<sub>2</sub> level is too high for us humans?

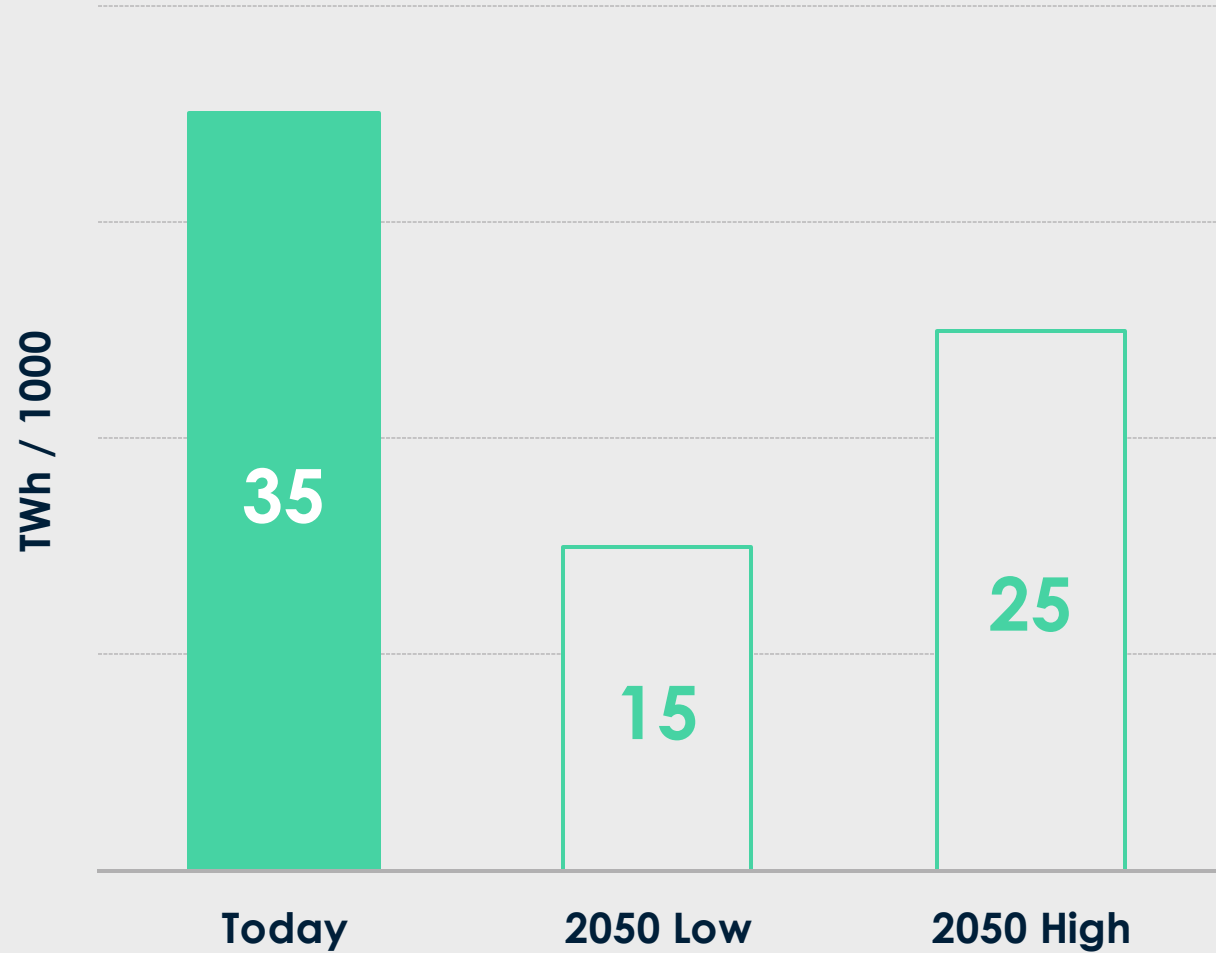


# Indoor CO<sub>2</sub> is proven to reduce cognitive function

by 20% for every 400 ppm



# Global liquid fuel demand for transport in an advanced electrification scenario





We spend **90%** of our time in buildings.

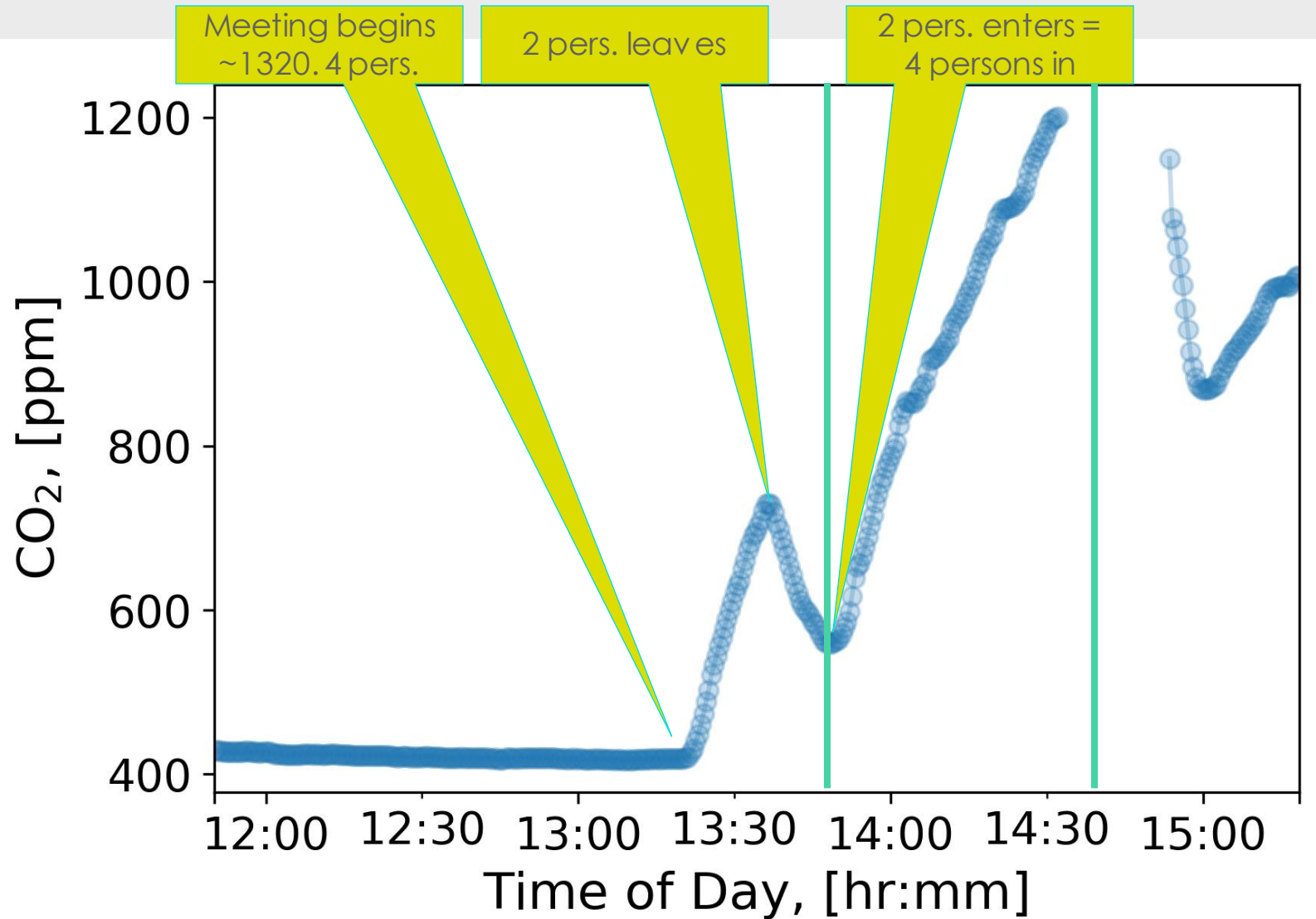


**90%** of office building's cost overall are the salaries of the people inside.



# Actual example 20.7m<sup>2</sup> meeting room

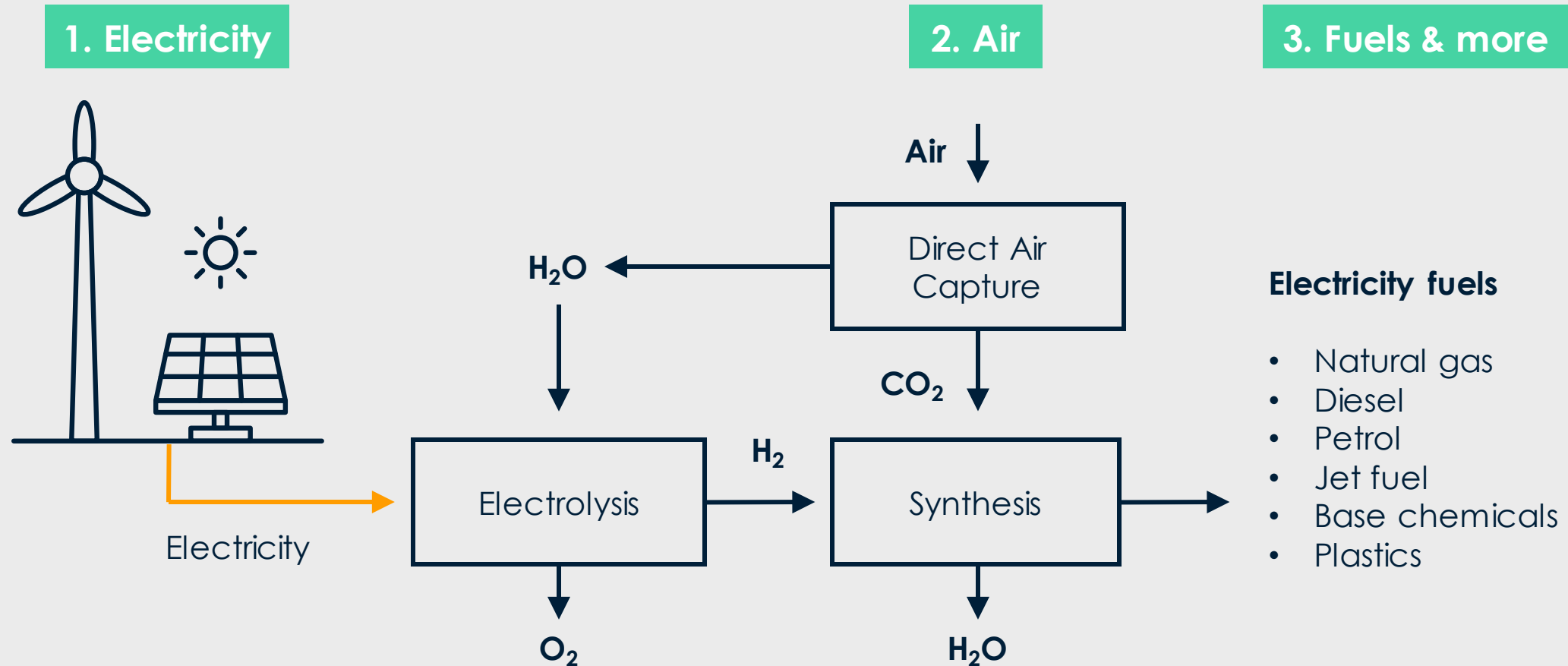
- Without CO<sub>2</sub>-lean air the CO<sub>2</sub>-level is very high in some tens of minutes from meeting start!
- Sensor location next to window. On table the CO<sub>2</sub>-level would be even higher
- 31 l/s replacement air volume



# THE SOLUTION



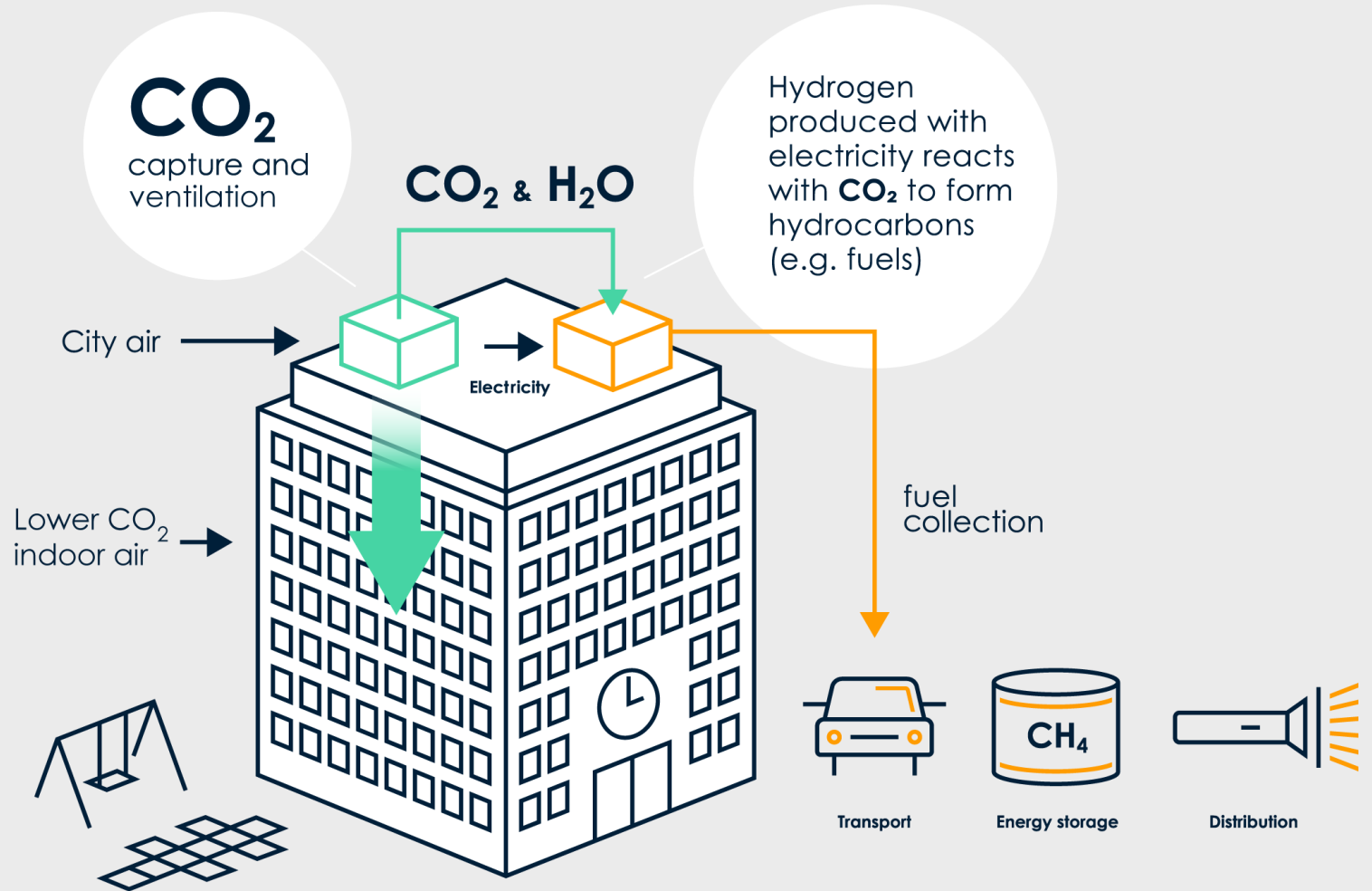
# Fuel from air – the principle



# Buildings as CO<sub>2</sub> sinks

## Carbon<sup>minus</sup>

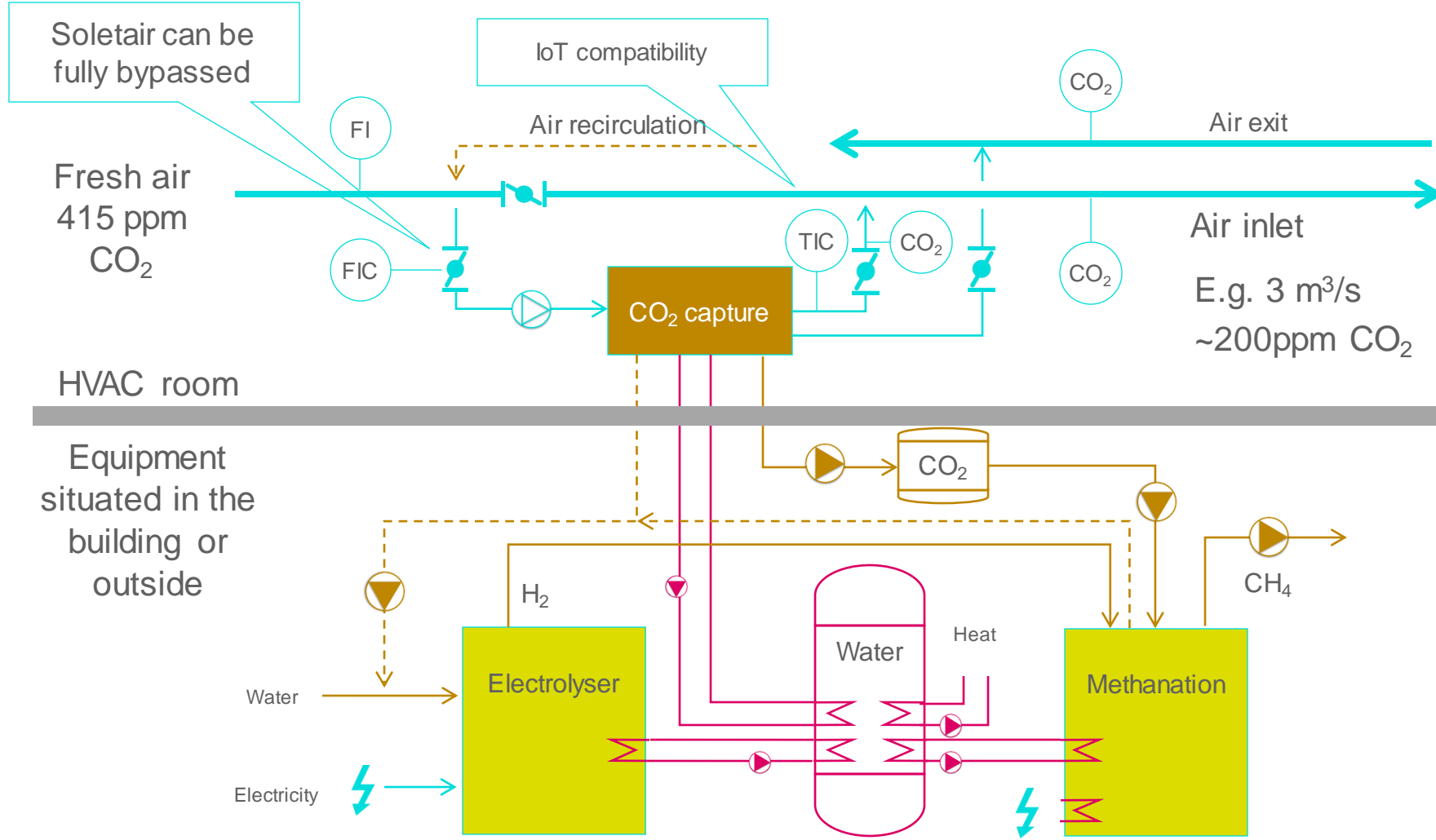
CO<sub>2</sub> and H<sub>2</sub>O can be captured from the air and recirculated to energy



# CO<sub>2</sub> capturing in HVAC room



# Equipment example



# IMPACT

# Market size

- Real estate is by far the most significant store of wealth (\$275 trillion)
- Direct Commercial Real Estate Investment Globally \$700 Billion pa
- Soletair Power's solution adds approximately 1% to the total capital = Market size max 7B€/a
  - **This market starts 2020 and grows to 100M€/a by 2030**
- Retrofits of existing buildings will be the BIGGER business
  - **Market starts 2020 and grows to 1B€/a in 2030**



# Business Model

Two global business models



Equipment sales for building ventilation connected CO2 capture with a cost plus model + aftersales



Sales of best performance indoor air for employees eg 1-2€/day/employee



# Benefits



## OFFICE OCCUPIERS



- Improved working efficacy
- **20% means 6-14k€/a/person**
- Better company image



## REAL ESTATE OWNER



- **New business from CO2 lean air**
- **E.g. 5-10% more rent**
- Advantage over other owners with new technology



## ENERGY COMPANY



- Possible new business from CO2 lean air
- Fuel manufacturing produces heat for building
- CO2 credits



## FUEL MANUFACTURER



- Synthetic feedstock for 100% renewable fuels

Our solution benefits different parties in different ways



# Competition

- Competitors sell CO<sub>2</sub> when Soletair Power is selling best indoor air for employees
- Others have such technology that it cannot be applied to building ventilation
- Speeding up ventilation is not an option since one needs to increase 50-100% to get the same effect. Buildings do not have the capacity to do that.



# Unique selling point

- We can improve employee's performance by 20% by every 400ppm CO<sub>2</sub> decrease with cost less than a coffee cup a day
- Work-focused amenities that align with the direct needs and priorities of people's jobs have the most value; amenities aren't for escaping work, they're for optimizing it.
- We have the world's first economically profitable power to X fuels production process

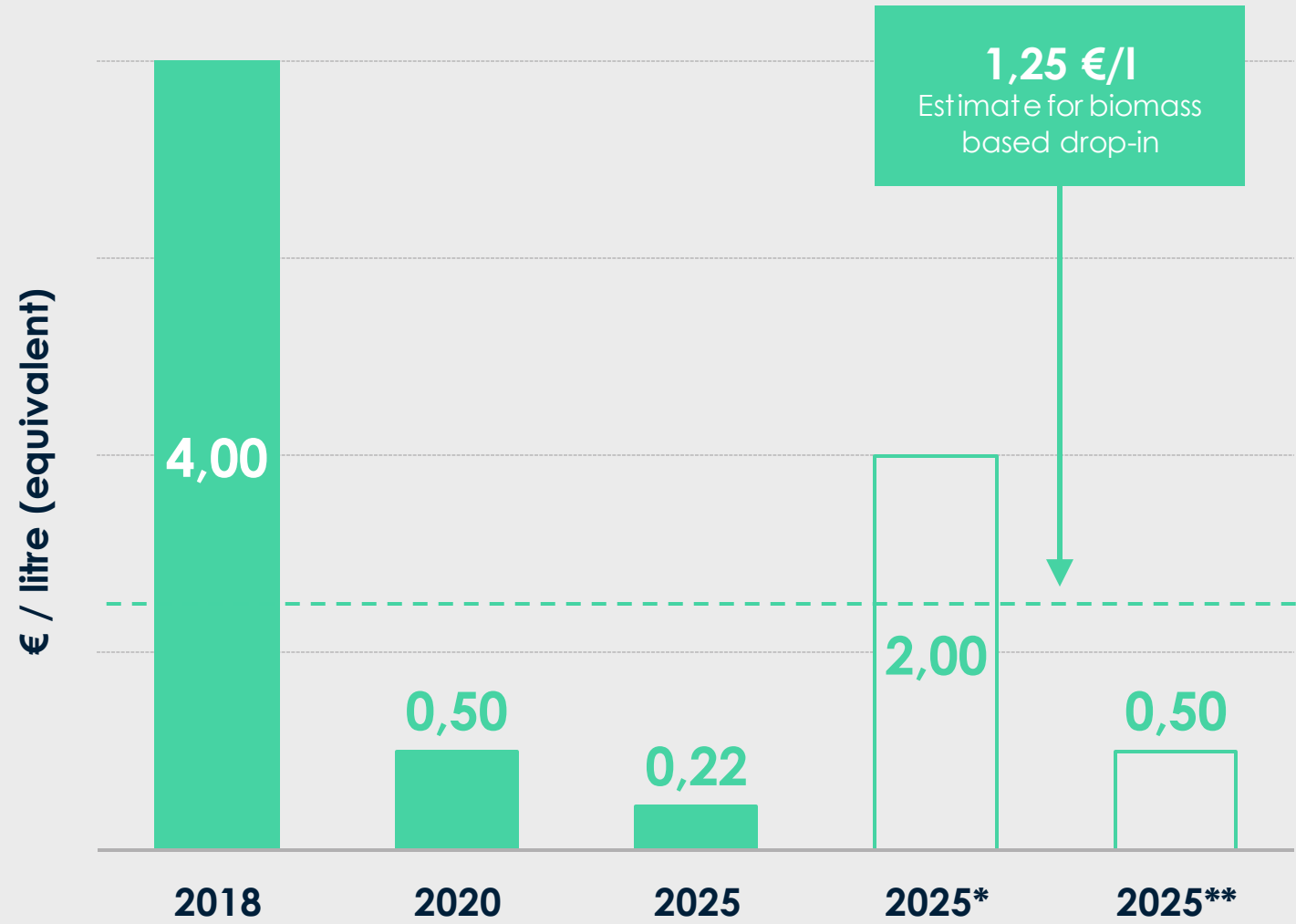
# High-performing people want high-performance buildings\*

- The cost of unwell workers represents 10% to 15% of annual global economic output, according to the Global Wellness Institute. But a high-performing, healthy workplace can boost engagement and productivity.
- Work-focused amenities that align with the direct needs and priorities of people's jobs have the most value; amenities aren't for escaping work, they're for optimizing it.

\*Ref: <https://www.gensler.com/uploads/document/614/file/Gensler-US-Workplace-Survey-2019.pdf>



# Fuel production cost



\* w/o building benefits  
\*\* large-scale industrial

# Technology is available

Soletair Power Oy has a patent application pending for the solution

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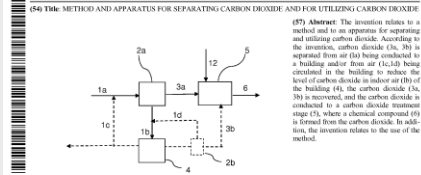


Fig. 1



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# Team



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# Compact P2X system



# BREATHE IN THE FUTURE

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