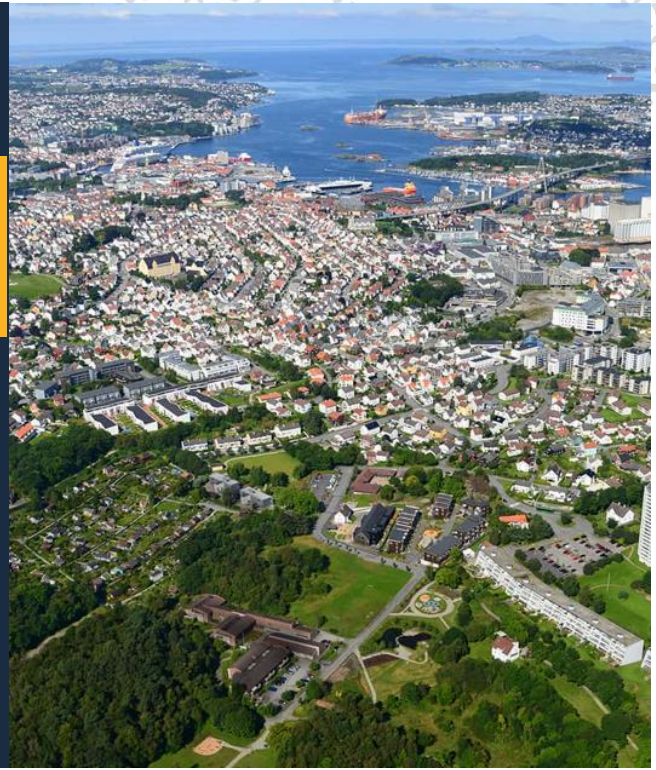
Open market consultation

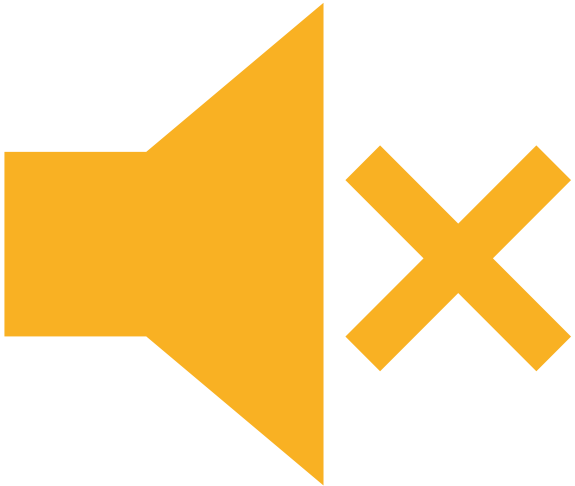
Welcome

MOBILITY (Lot 1)

AI4Cities - webinar

City of Stavanger





MEETING PRACTICALITY:

- Please turn off your microphone and camera!
- Be aware we are recording, and will distribute to all participants afterwards.
- Questions in chat – only!

Warning: This meeting is in Norwegian

We are thrilled that you made it here!

….but if you are expecting this meeting to be in English you will be disappointed.

Don’t worry, the slides are in English, and will be made available – and **if there is interest for this we will make an English presentation** with sound available as well (meeting, recording or both).

So, if you want the English version please tell us in the chat, or send us an E-Mail:

nils.henrik.haaland@stavanger.kommune.no

One option – read the slides, and listen to a strange language!

Opening :
Deputy Mayor
Stavanger kommune
Dagny Sunnanå Hausken

Program

- **Welcome** - Deputy Mayor, Dagny Sunnanå Hausken
- **Introduction** to the project – Nils Henrik Haaland
- **AI4Cities PCP (Pre-commercial procurement)** – the process – Stina Sel
- **Framework** – environmental and municipal plans from Stavanger – Jakob Ruus

- Virtual coffee break (10 mins)

- The two **Stavanger** initial **challenges** – Nils Henrik Haaland
- **Energy** – general challenge and Copenhagen cases – Tina Hjøllund

- **Q&A** (10 mins)

Open market consultation

Introduction to the project

MOBILITY (Lot 1)

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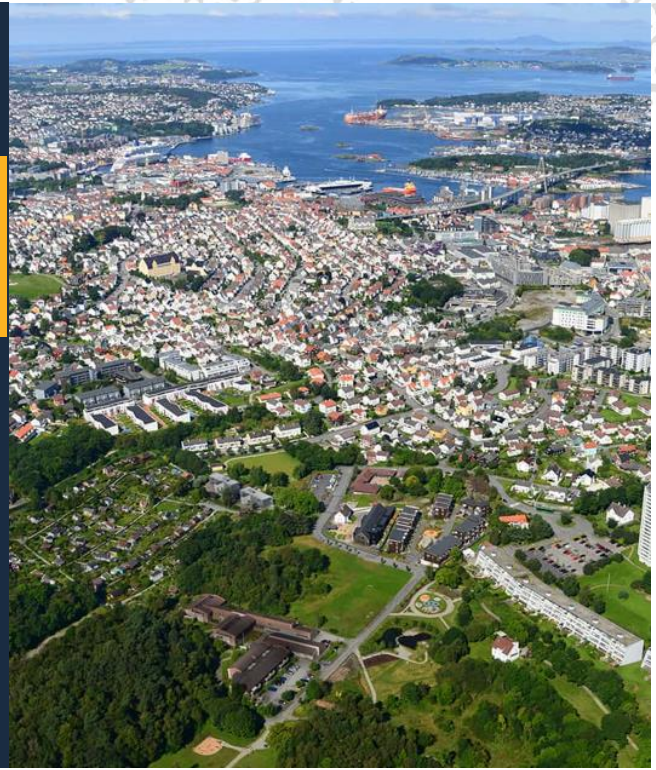


The Stavanger team

The Stavanger team – AI4Cities
From left back: Inger Hanne Vikshåland, Eva Jenseg, Jakob Ruus
From left front: Imme Dirks Eskeland, Stina Sel, Nils Henrik Haaland

Not present at the photoshoot:

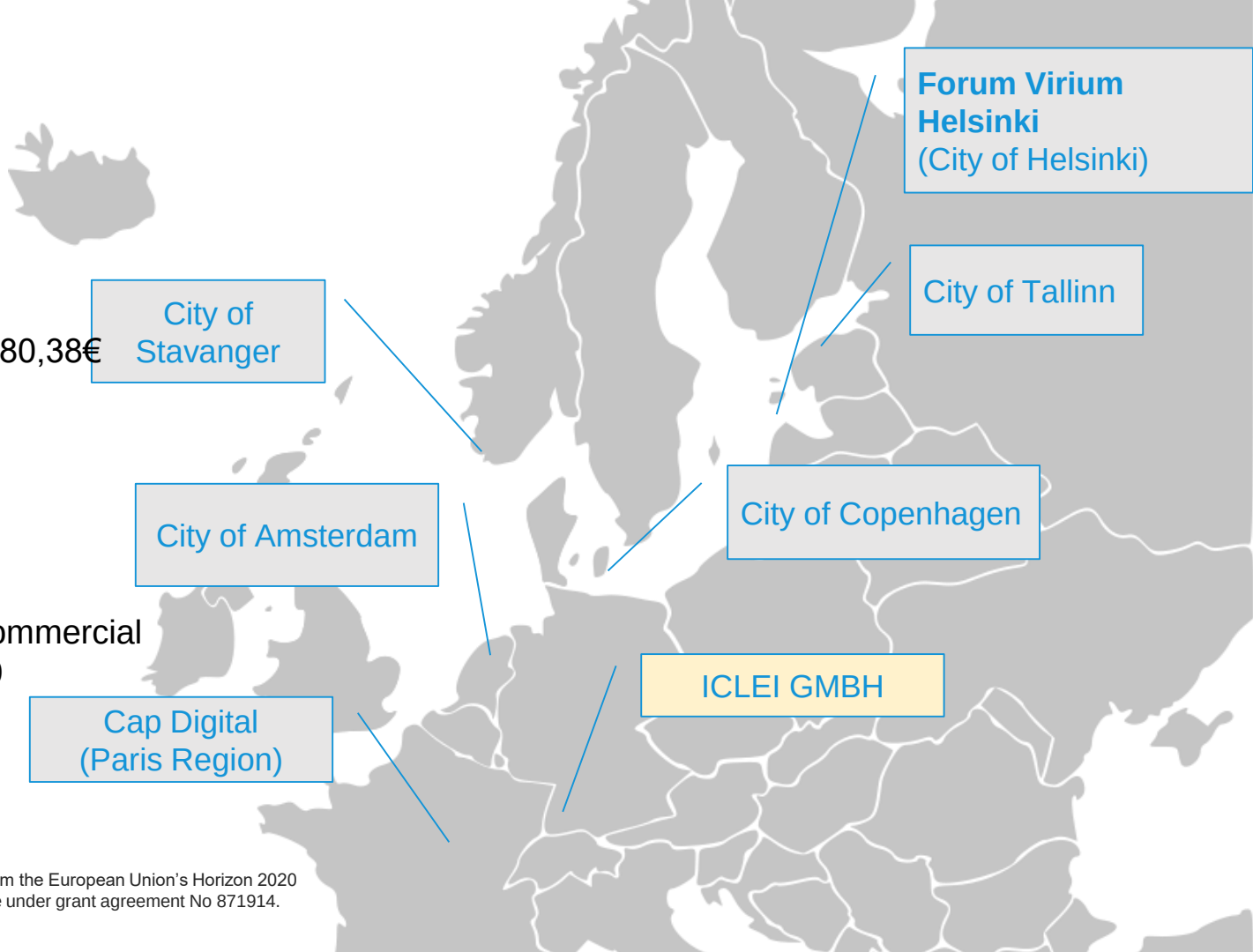
Lars Christian Tufte

AI4Cities

Budget: 6 666 533,75€
Maximum Grant: 5 999 880,38€
PCP: 4 666 622€

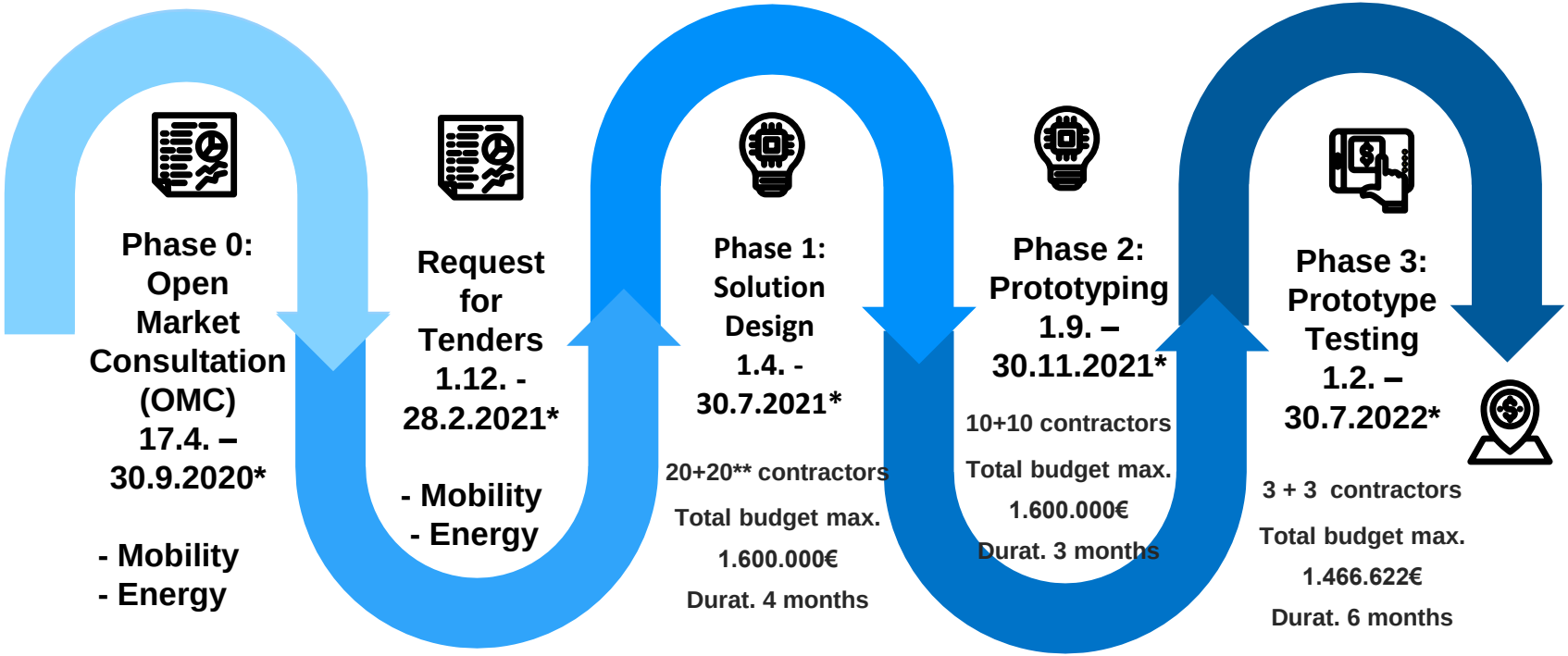
Duration: 36 months
1.1.2020 – 31.12.2022

Funding instrument:
Horizon 2020: PCP Pre-Commercial Procurement, ICT-34-2019



The project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 871914.

Timeline for PCP process
1.1.2020 – 31.12.2022



* Estimated schedule

** The number of contractors and the budgets are indicative

AI4Cities – why are we here?

Our goal is two-fold

Reduce CO2

Help develop new sustainable business

Also

We are here to challenge you!

Innovation and procurement – a potent mix

The Stavanger team – our approach

We will not serve you a pre-made

We aim to make this with you.

Presenting two challenges that are (we believe) based on good ideas, and important issues.

But we need your input – that is why we have this meeting

This is co-creation.

We need to understand and inform our possible challenges. No interest means no challenge.

The decision on what will end up in the RFT (request for tender) is after the OMC (fall 2020).

United challenge with the other cities. Open search for the best ones.

What do we look for?

Unique and innovative digital solutions utilizing AI to able to **help Cities to reduce their CO2 emissions** in two domains: energy and mobility via a challenge-based PCP competition.

Mobility (Lot 1)

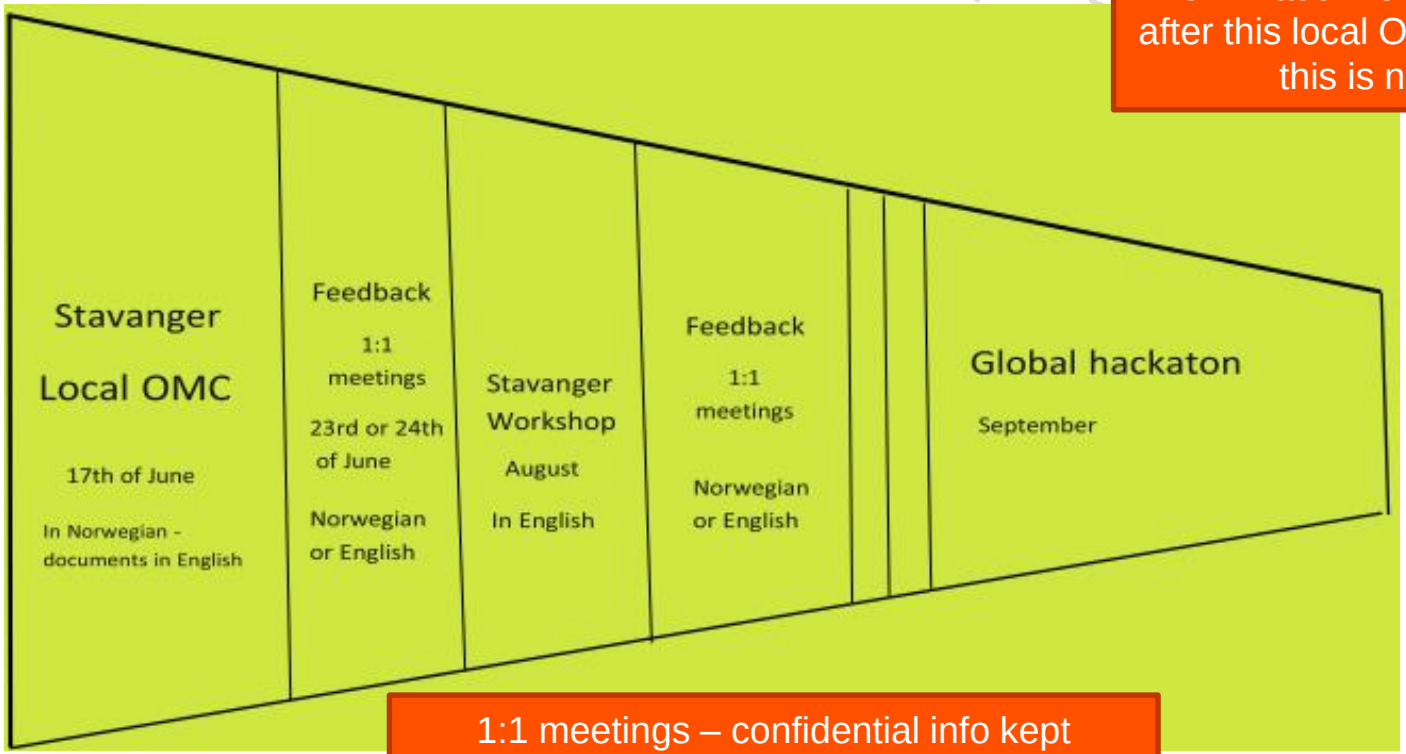
Energy (Lot 2)

AI4Cities challenges build on **highly innovative and not market-ready technologies** to bring **added value** for cities' management and decision making.

Stavanger – AI4Cities

- Where du we go from here?
- Ka då ittepå?

We will add more 1:1 meetings after this local OMC in August if this is needed.



1:1 meetings – confidential info kept confidential, we present findings to all, you inform us, equal treatment

Questions to you (added as document in Mercell)

How do you see the challenges?

What can we acheive by solving these issues?

What are the main challenges for you in such a task?

Is this interesting as a challenge for you?

Too ambitious / not ambitous enough?

Is this area in need of R&D? Is this realistic to test in 2022? Is this technically possible?

Can you contribute? How?
Model for financing?
Cooperating with others or solving on your own?
How could we change the challenge to improve it?

Other comments?

Action points (In Mercell)

- Input on the challenges / answer our questions

  (+ add other comments/questions)
- Register for 1 to 1 meetings.
- Is Mercell (our procurement web tool) not possible / understandable? Send an e-mail. Use our website to find more info, and question sheet.

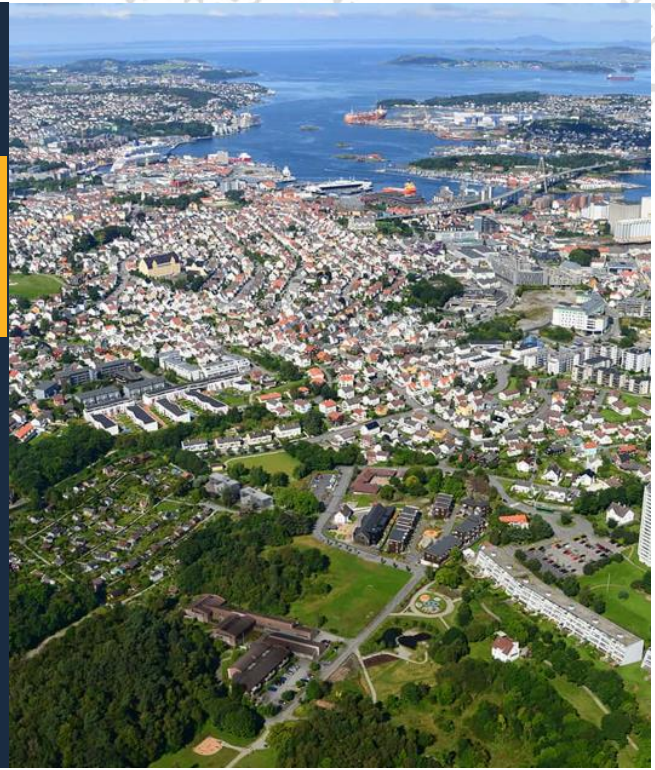
Open market consultation

AI4Cities PCP

MOBILITY (Lot 1)

AI4Cities - webinar

City of Stavanger



Innovation Procurement in H2020

Through innovation procurement the public sector can drive innovation from the demand side.

- Pre-Commercial Procurement (PCP) addresses the development and testing of innovative solutions

- Public Procurement of Innovative solutions (PPI) focuses on the deployment of innovative solutions

Pre-commercial procurement

Pre-Commercial Procurement (PCP) **challenges industry from the demand side to develop innovative solutions for public sector needs** and it provides a first customer reference that enables companies to create competitive advantage on the market.

PCP enables public procurers **to compare alternative potential solution approaches** and filter out the best possible solutions that the market can deliver to address the public need.

https://ec.europa.eu/digital-single-market/en/pre-commercial-procurement

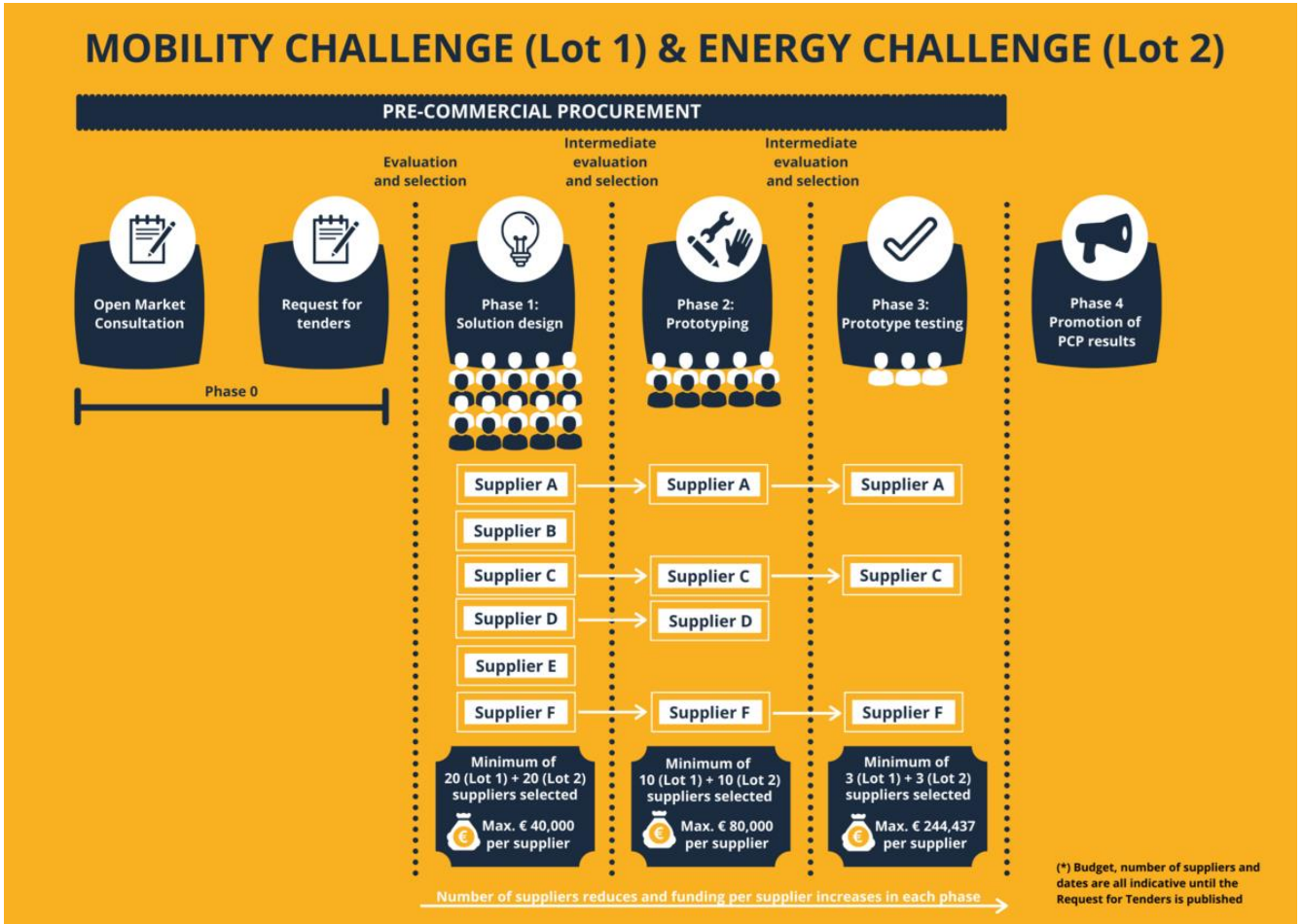
PCP vs. Traditional Public Procurement

PCP	Traditional procurement
Joint procurement tool: a Buyers group launches the RfT	**Individual procurement tool** - RfT is launched normally by a single department or unit inside the a City
High risk: high degree of innovation and R&D effort required	**Low risk:** Low degree of innovation focused on solutions on (or close to) the market
Functional specifications for prototypes development - focus on medium-/long-term	**Technical specifications for mature product/ service -** addresses immediate/ short-term needs
Competitive development with several contracts to several suppliers	**Single contract: 1 contract to 1 supplier** awarded
IPR – Risk/Benefit-sharing	**IPR** generated
Exemption for R&D services under EU Directives and WTO rules: special legal framework (H2020)	Tendering procedures and legal framework: **national public procurement** rules apply
Development in **multiple phases**	Development in **1 phase**

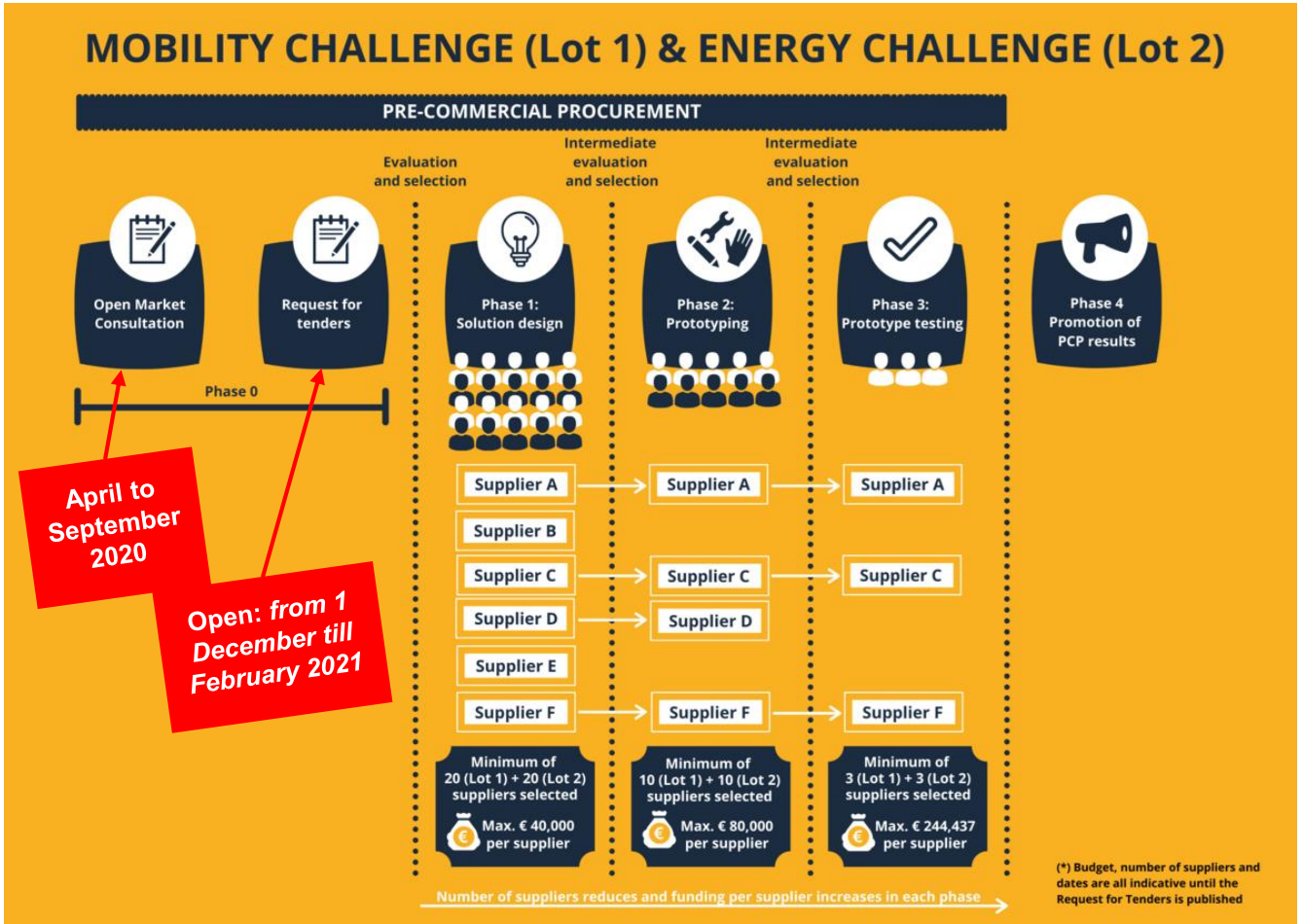
Key requirements and guidelines

- **Joint Procurement Agreement** between group of Procurers/Buyers
- **Risks and Benefits** of the R&D are **shared between the procurers and the Suppliers**
  - **IPR** retained by suppliers - must be exploited after PCP completion
  - Procurers can **use the solutions royalties free and exploit learnings**
- **Focus on Innovation**: R&D is at least 50% of the total contract value
- **Tool to foster EU competitiveness**: at least 50% in EU Member States and/or Associated Countries to Horizon 2020.
- **Increase Cities capacity** in leading the market to create impact based and innovative solutions

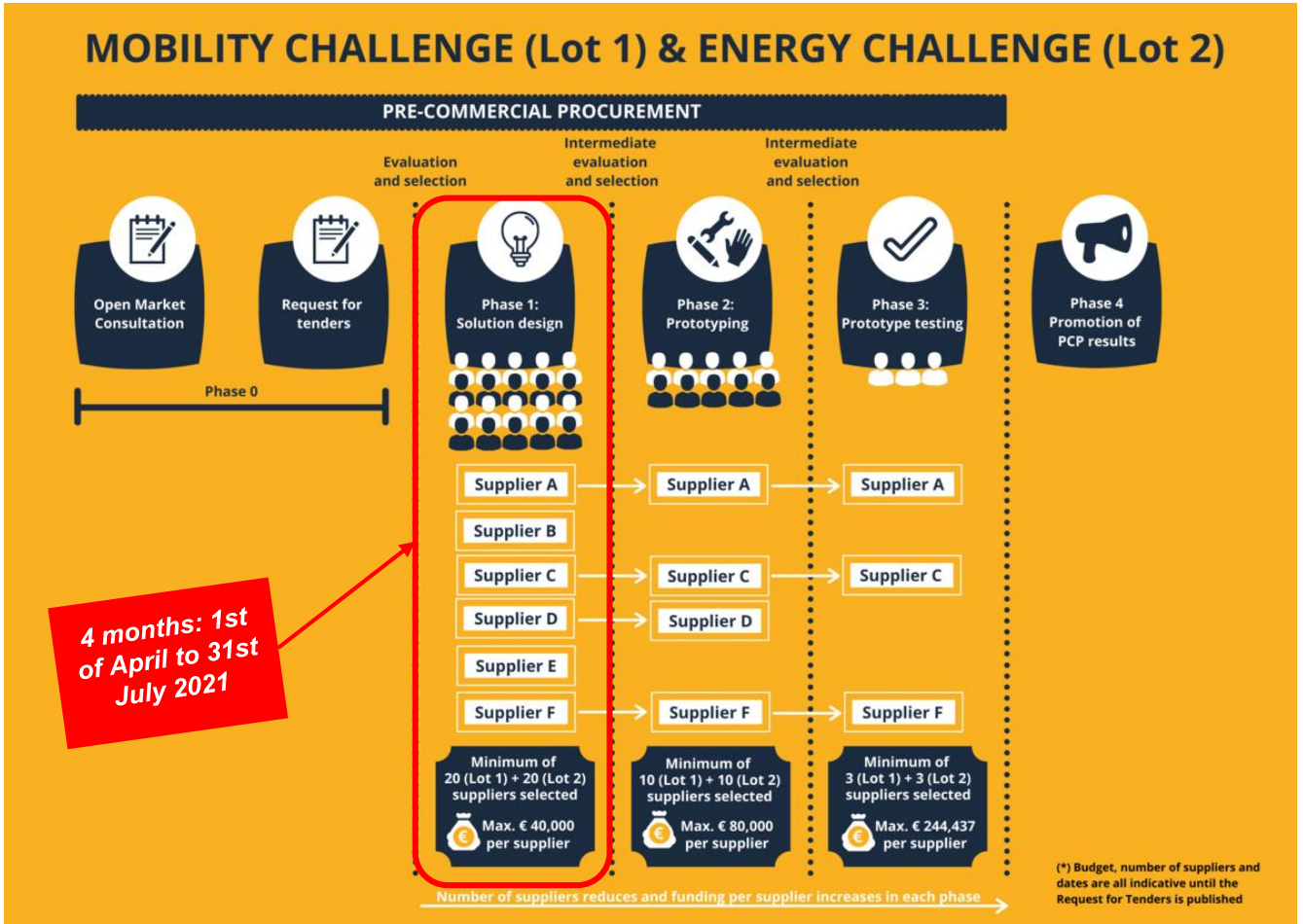
PCP Process and timeline



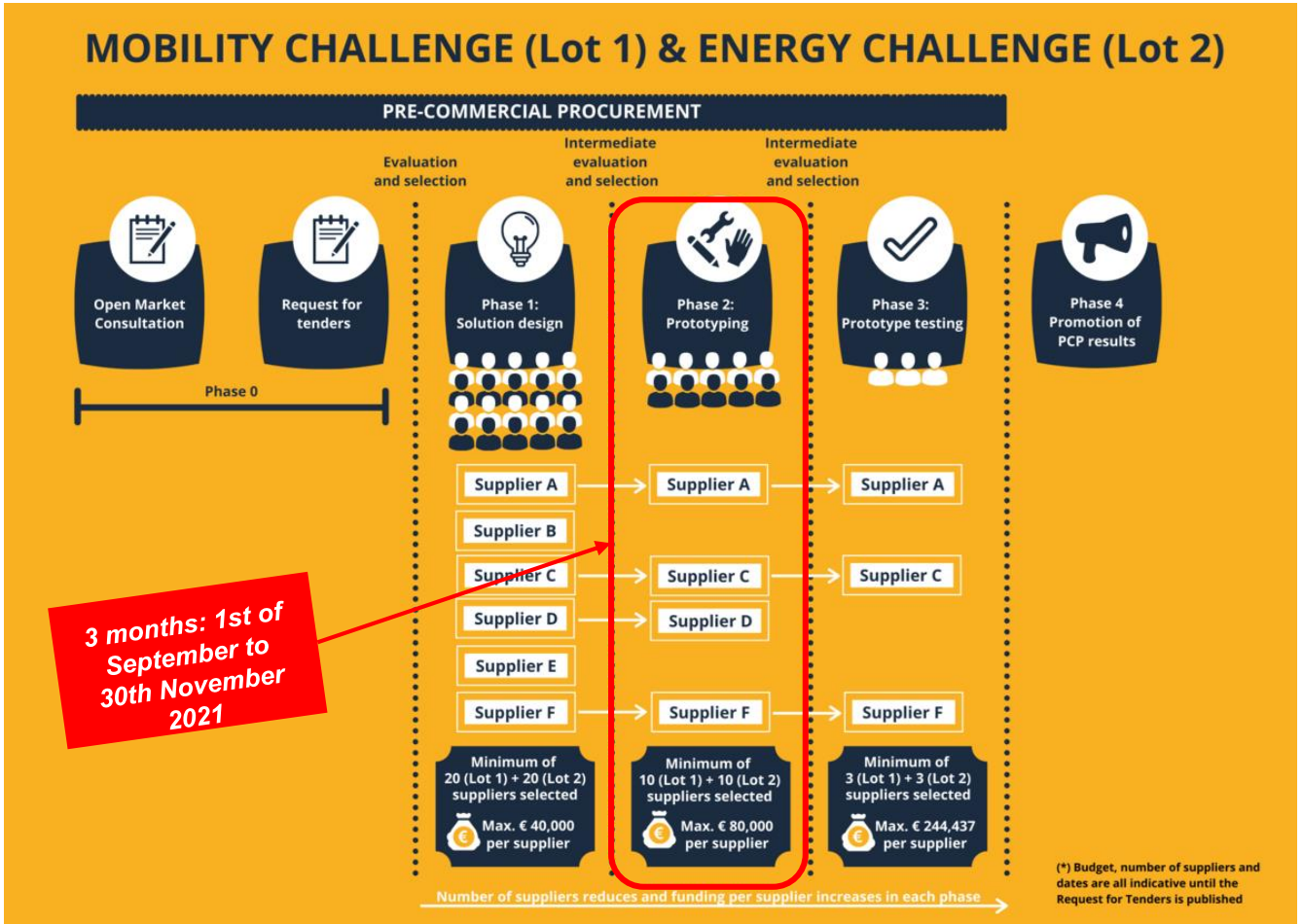
PCP Process and timeline



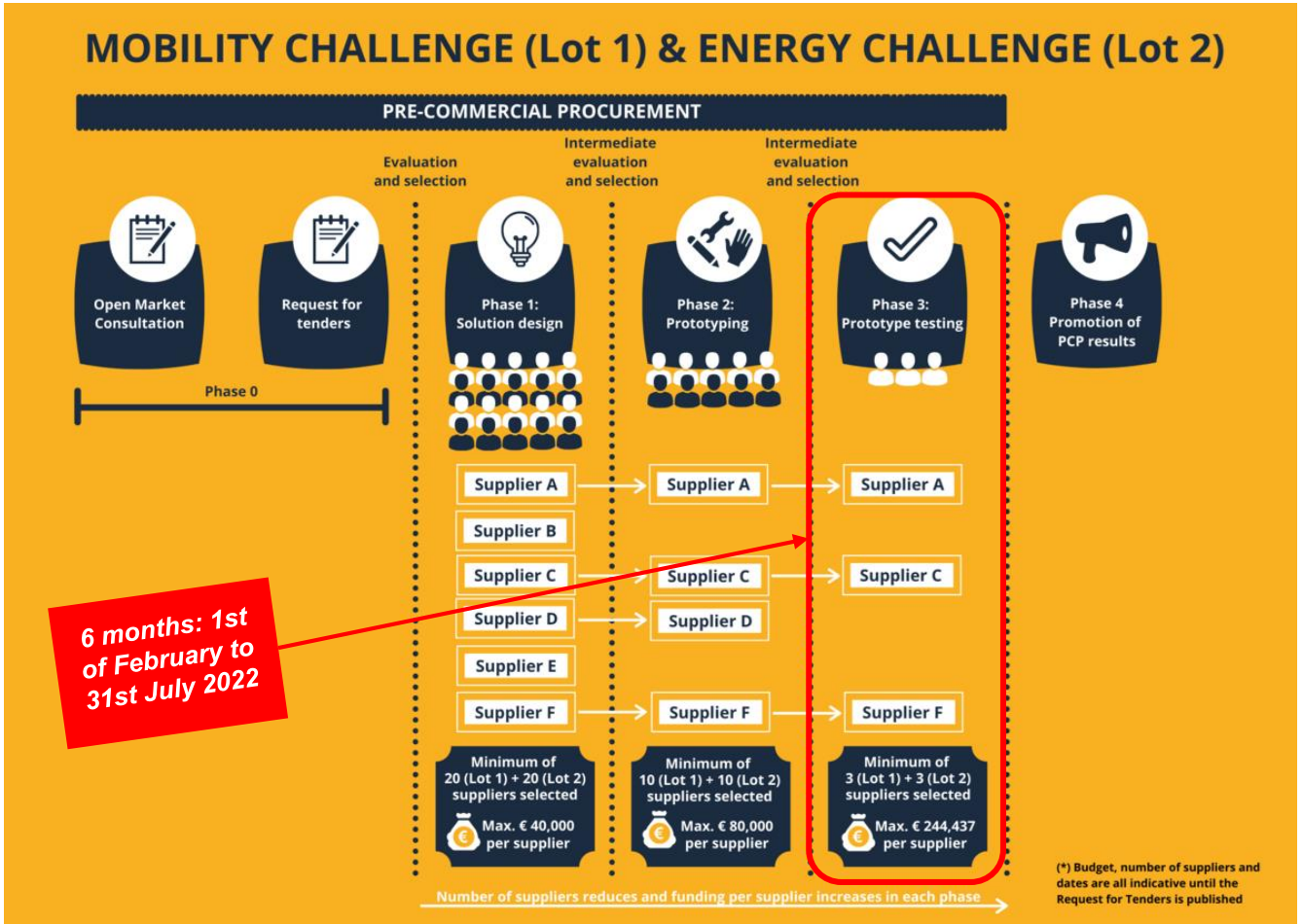
PCP Process and timeline



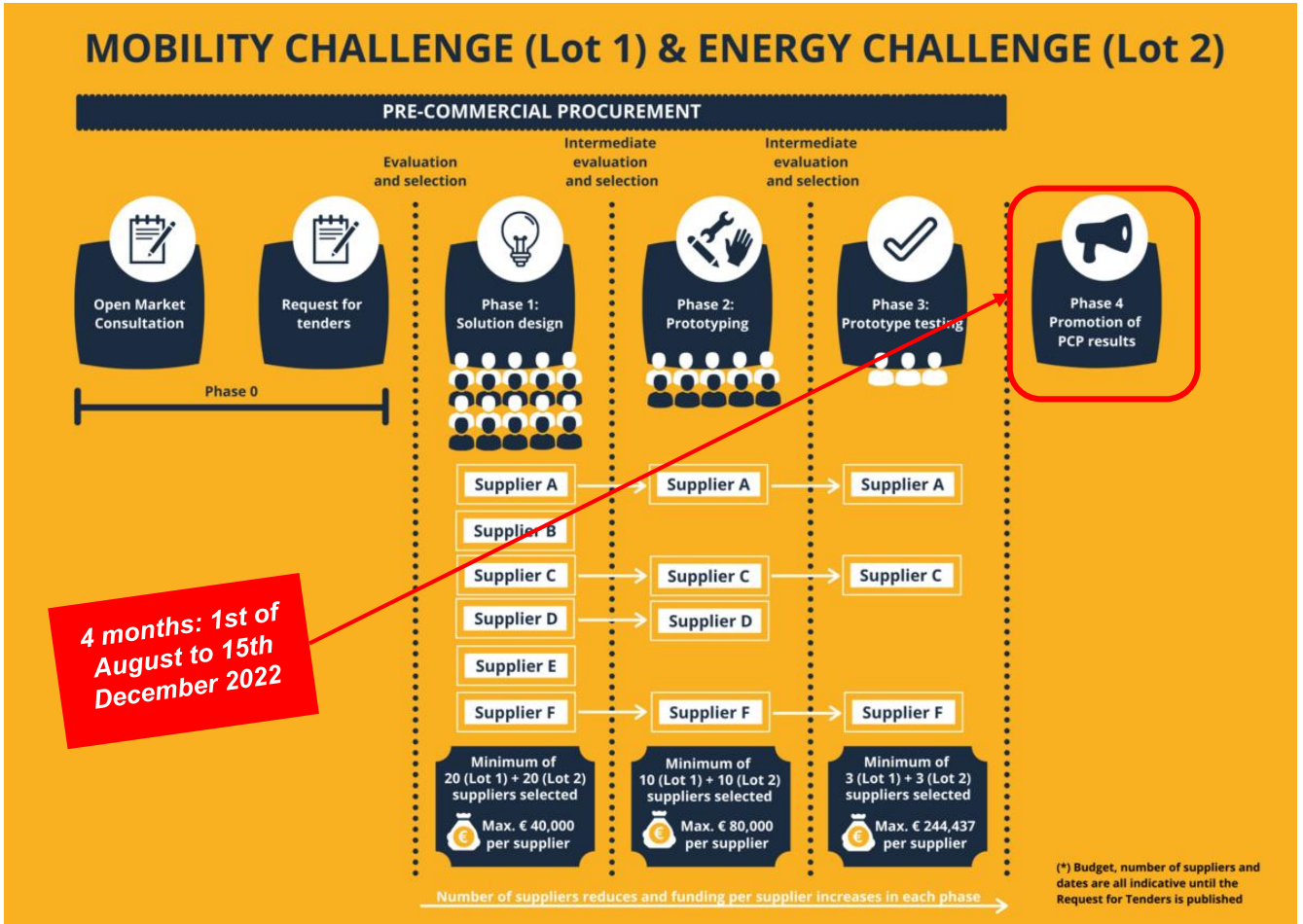
PCP Process and timeline



PCP Process and timeline



PCP Process and timeline



PCP Budget*

Expected number of suppliers (Lot 1 & Lot 2)	Max budget per supplier (inc. VAT)	Total available budget per phase (inc. VAT)	Duration of each phase
Phase 1: 40 (20+20)	40.000€	1.600.000€	4 months
Phase 2: 20 (10+10)	80.000€	1.600.000€	3 months
Phase 3: 6 (3+3)	244.437€	1.466.622€	6 months
Totals	**364.437€**	**4.666.622€**	

*the budget breakdown and number of suppliers are indicative until the Request for Tenders is published.

Contract procedure

- **One Joint Request for Tenders** published on *1.12.2020 (tentative date)*
  - **N.B. Two (2) Lots** - each lot must be **applied separately!**

- **Lead procurer** (Forum Virium Helsinki) **awarding all contracts** acting **on behalf of all procurers in the Buyers Group**
  - **Single Framework Agreement** per winning tenderer covering all PCP phases, plus a
  - **Specific Phase contract** per PCP phase (depending on subsequent evaluations and offers).
  - **Payments done per phase** upon **satisfactory phase completion**

Reference websites for information on PCP

- European Commission framework on Innovation Procurement
- EU policy initiatives on Innovation Procurement
- EU funded projects implementing PCPs or PPIs
  Innovation Procurement Platform
- Procurement forum

See ‘What is a PCP’ tutorial from our “*older sister*” SELECT4CITIES.EU project: https://www.select4cities.eu/what-is-pcp

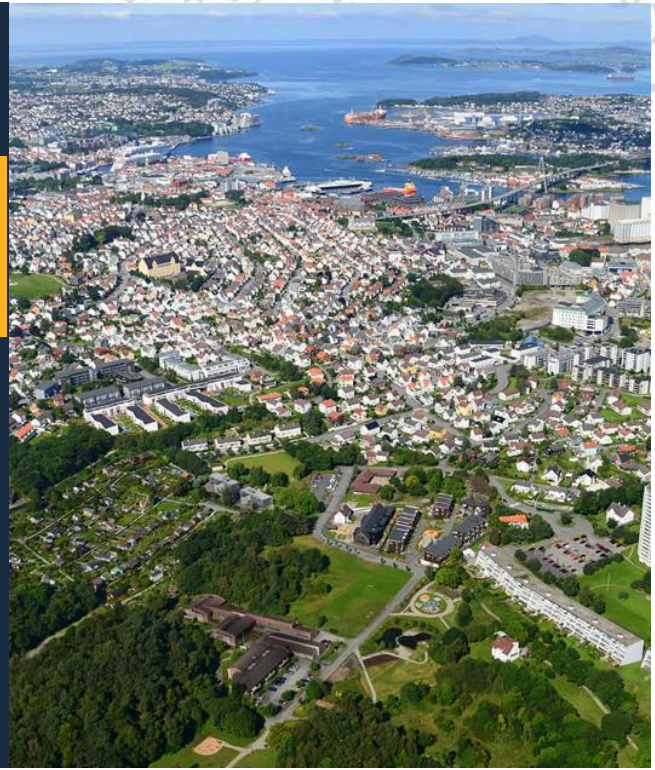
Open market consultation

Framework environmental plan

MOBILITY (Lot 1)

AI4Cities - webinar

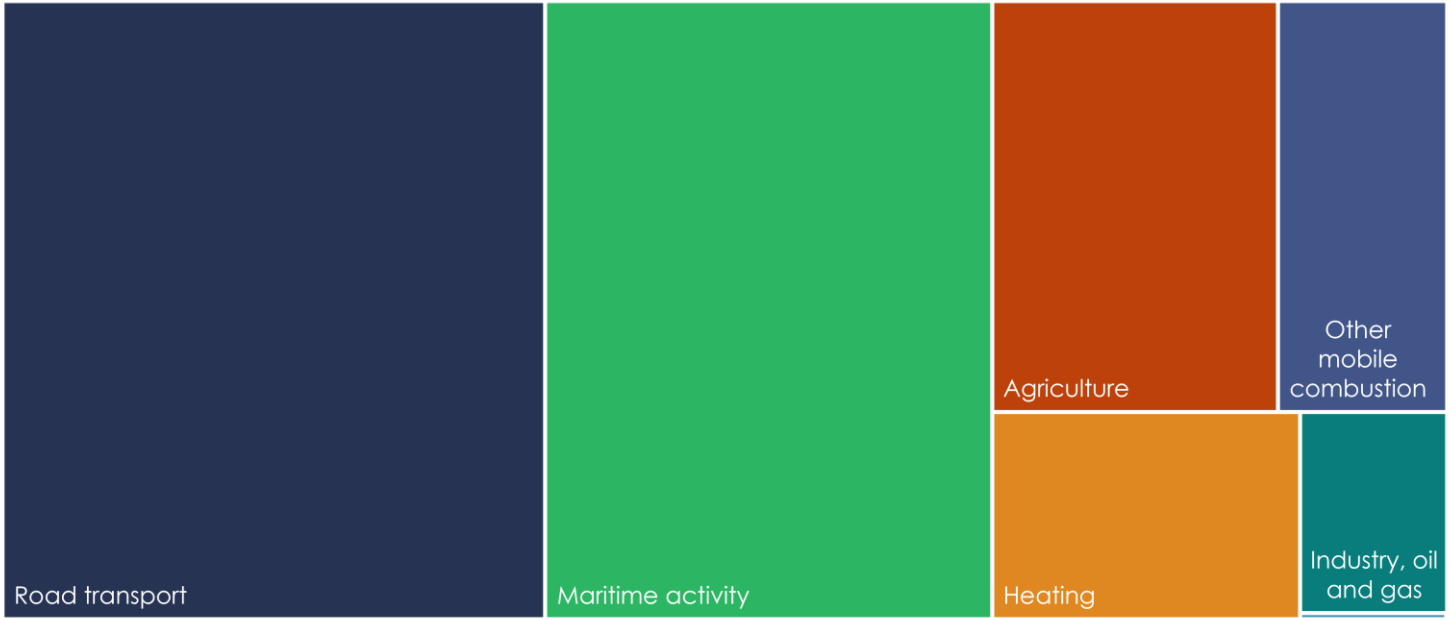
City of Stavanger



City of Stavanger

Climate and Environmental goals

Stavanger - emissions 2018



Central aspects of the plan

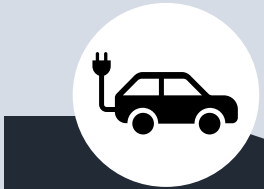
- Emission reductions
- Circular economy
- Sustainability

Main objectives

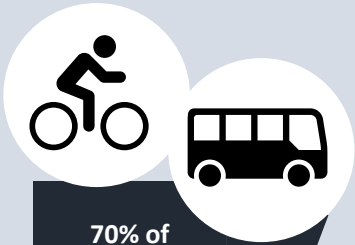
- 80% reduction of GHG emissions by 2030
- Fossil free by 2040

Mobility
City of Stavanger

80% reduction from transport by 2030



100% reduction from transport by 2040



70% of passenger transport:
- Bike
- Walk
- Public transport

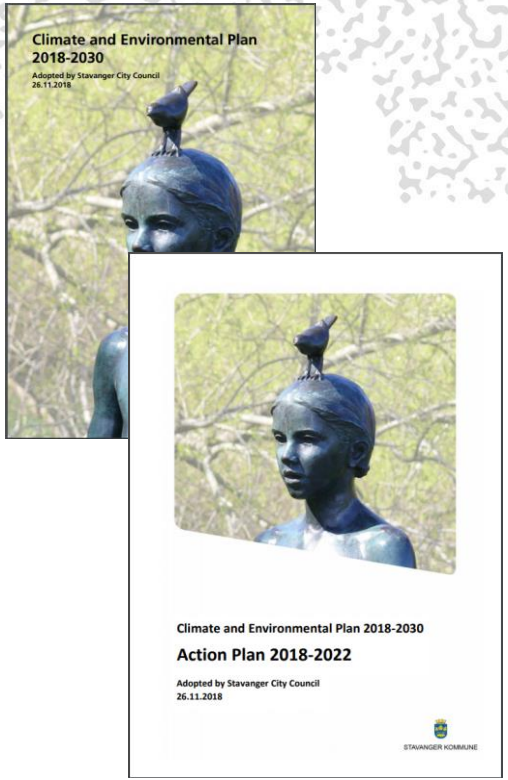
Emission reduction from heavy vehicles:
20% by 2030
100% by 2040

Solutions?

Action plan:

- Action points to ensure achievement of of the plan.
- Procurement as a tool

- **Mobility:**
- Establish distribution points for goods deliveries in the city centre, or in connection with selected mobility points
- Establish places for shared transport solutions in the districts (mobility points).
- Establish strong incentive schemes for fossil-free goods transport.
- Require fossil-free goods deliveries in all municipal tenders and procurements



Measures for transport

- Reduce scope of road transport:
  - "Ten-minutes' city"
  - Densification along bus routes
- Change travel habits:
  - Busway with frequent departures
  - Continuously updating cycling network
  - Secure bike parking, improve City bikes scheme and walking routes/shortcuts
  - Promote car sharing
- Promote renewable fuel:
  - Increase number of charging points

* Counseling and support scheme for housing cooperatives and co-owners

- Examine charge from lamp posts etc., in particular in the "Wooden House City"
- Cruise ships: Promote fossil free approach, stay and departure to and from Stavanger harbour.

AI4CITIES

ACCELERATING CARBON NEUTRALITY

Virtual coffee break

The project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 871914.

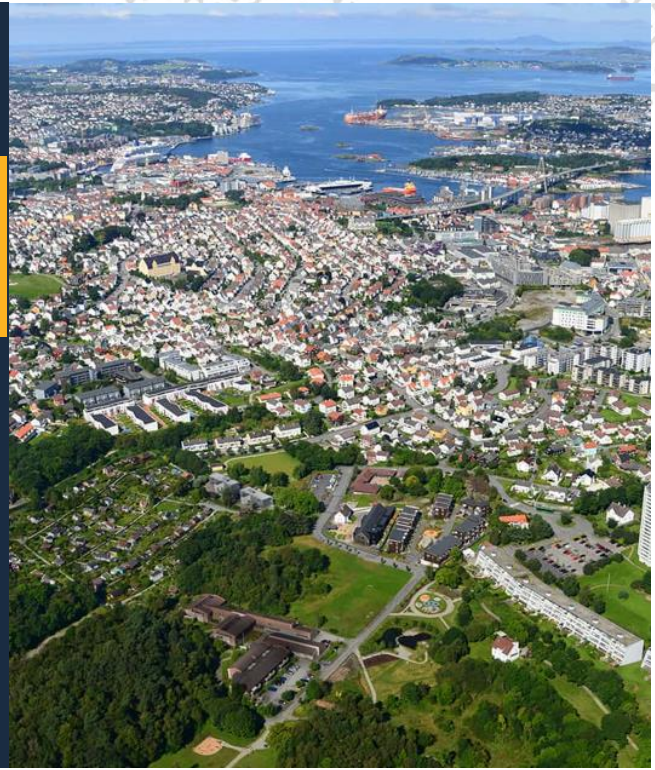
Open market consultation

Stavanger challenges

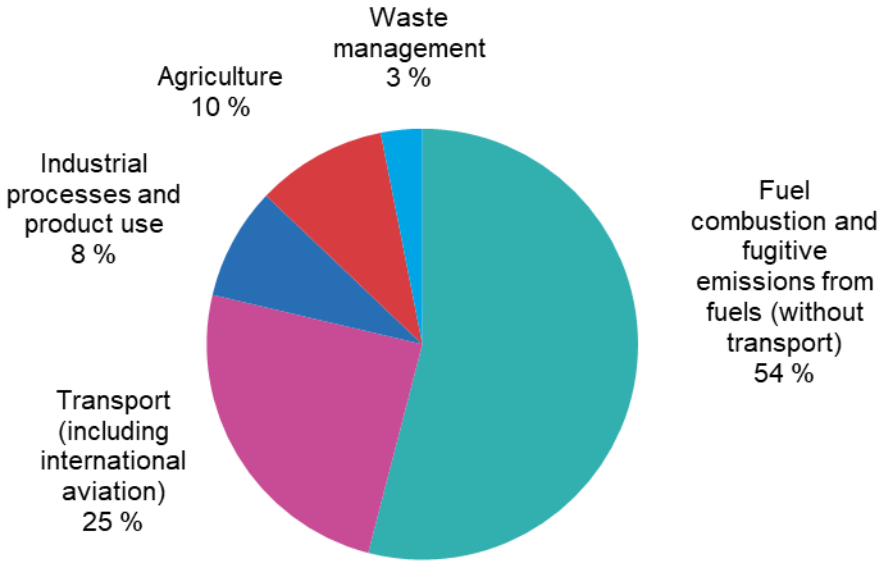
MOBILITY (Lot 1)

AI4Cities - webinar

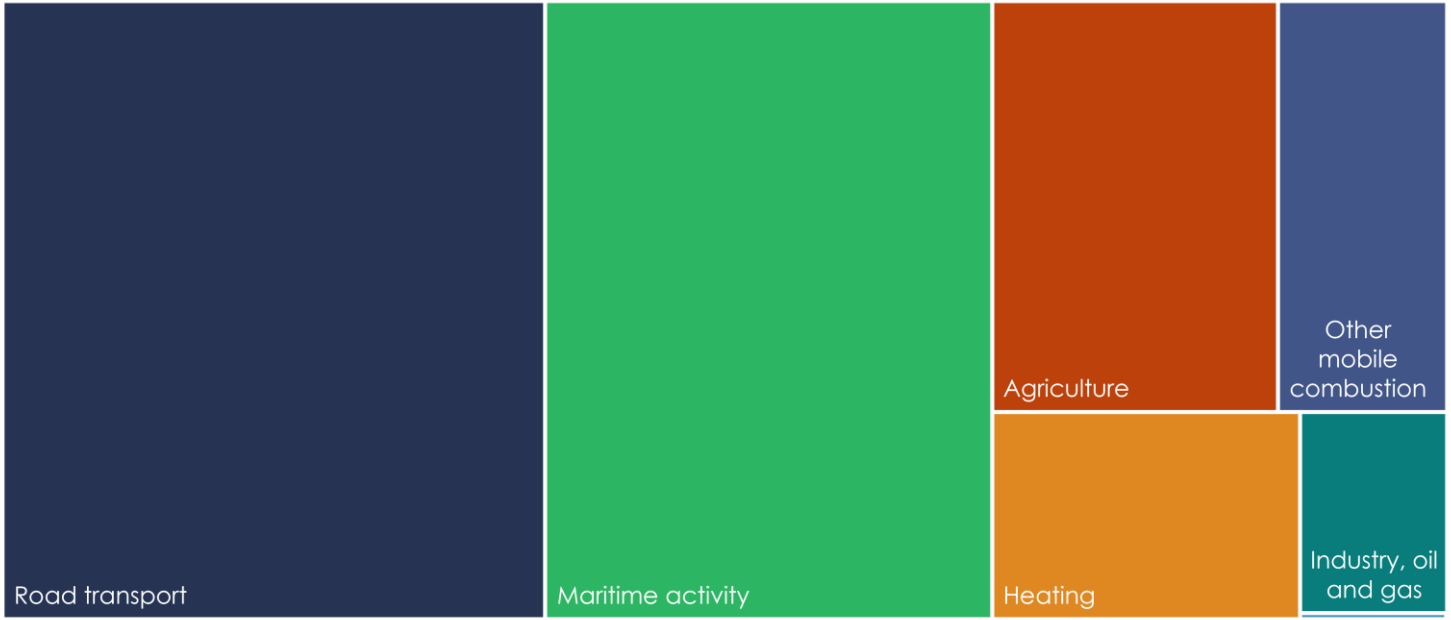
City of Stavanger



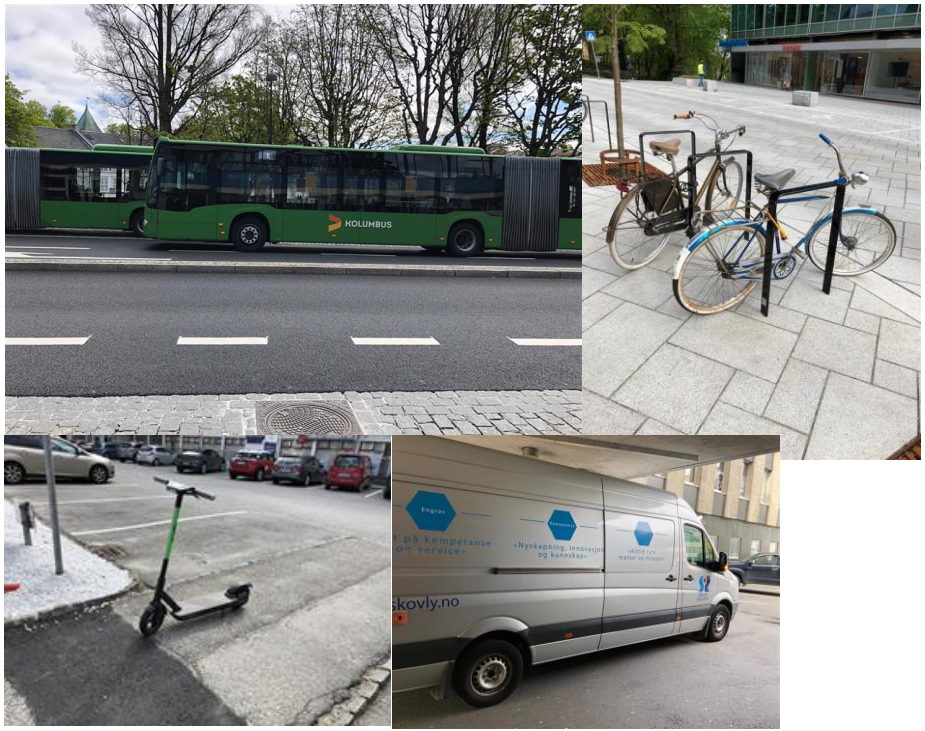
EU - emissions 2017



Stavanger - emissions 2018



The two cases – an invitation



1. **Mobility as a challenge - area**
   - People flow
   - Logistics
   - Traffic flows
2.
   - **Looking for the best solutions**
   - Open for suggestions
3.
   - **Identified two cases with a clear potential**
   - Fits Stavangers needs
   - Universal

The needs of Stavanger?

We need to reduce CO2. The needs for change are the same.

Similar challenges making this change.

Difference in ambitions? Difference in focus?

Difference in context.

AI4Cities – Data sources

Are there other sources available?

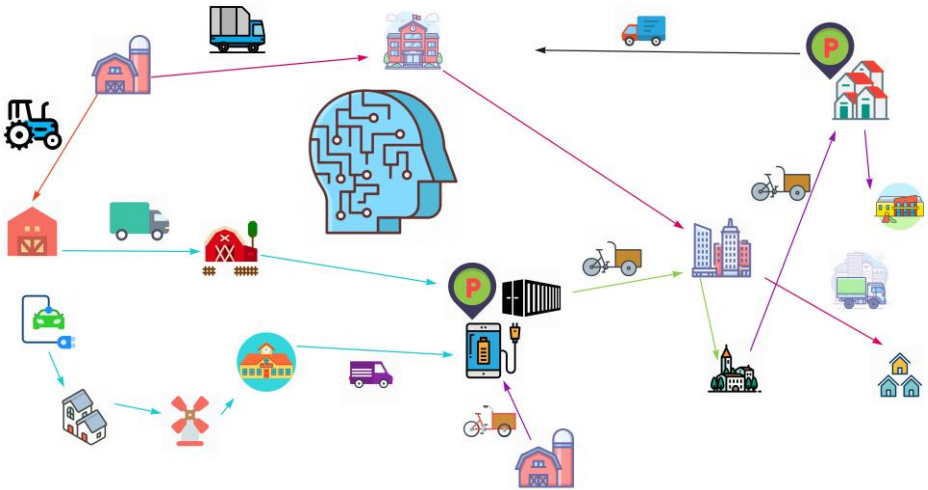
Other sources technically available?

Other sources with better quality?

Should we build/collect more data?

Sensors or cameras

Optimized and coordinated transport of goods and parcels



1 What is the challenge?

- Make coordination of transport an option by creating av ecosystem for procuring transport
- Using this as a base for a local marketplace
- Today cars are half empty. Local trade is difficult

2 What is the potential impact?

- Substantial reduction of local CO2 emissions by better use of transport capacity
- Lowering cost of production for local trade
- Replacing some of the need for long distance transport

3 How can we use AI here?

- Using AI to optimize trips
- Using AI to connect producers and consumers

Core problem

Too much unused space during local transport. This creates a demand for more driving. This also creates more expensive local transport.

Better optimalisation on long transport makes short distances comparatively more expensive. This again affects the business strategy for local producers, making local markets unutilized.

What could we acheive?

- Reducing CO2 – main goal

Added effects
- Improving traffic
- Improving transport in periphery
- Reducing costs (sender and receiver)
- Improving local business
- Building a digital infra structure to build/rebuild the local market places.
- Building sustainable market places.

Optimizing what by use of AI? – relevant factors.

- Best routes
- Optimal time slots
- Distance
- Price
- Volume / capacity
- Energy profile
- Charging points – charging status
- Generate procurement / generate procurement suggestions / suggest routes and cooperation?

Data sources

Do we need more data?
- from new sources?
-should we collect new data?
-What type of data?

Other

SUPPLIER VEHICLES – POSITION AND STATUS

CHARGING STATUS FOR ELECTRIC VEHICLES

ORDERS – STATUS

TRANSPORT NEEDS – STATUS

HISTORY

Transport

COUNTING POINTS – CARS

GPS

REAL TIME BUS INFO

PLACEMENT, AND HISTORIC USE OF CHARGING POINTS

CAR REGISTER

MAPS, ROADS AND INFRA STRUCTURE

INCIDENT REPORTING SYSTEM

Market

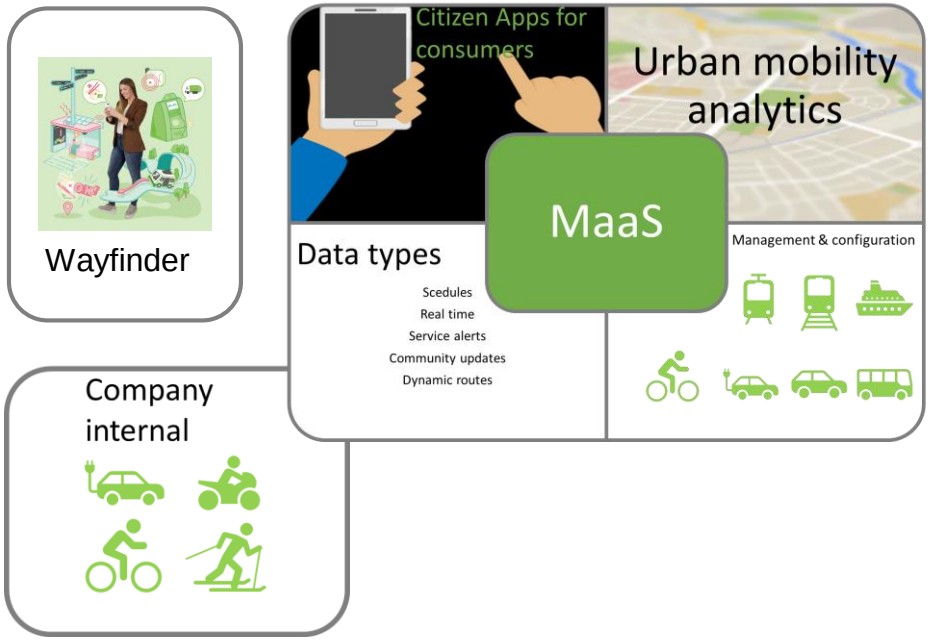
Weather data

E-trade data from the municipalities

Seasonal calendar – berries, fruit and vegetables

Menues from restaurants, nursing homes and inhabitants

Company ad-on for travel planning



1 Seemless integration and navigation public and company internal solutions

- Today there is no integration between public transport and company travel solutions – making it difficult to plan journeys
- Difficult to navigate (finding bikes, bus stops etc.)

2 Wayfinder – a navigator during the travel

- Making it easier to use sustainable solutions by introducing digital wayfinding (finding bikes, where the bus stops are located, where the ev-car is parked etc.)

- **Use of AI**

3 AI for planning of best routes based on all relevant transport solutions

- AI for choosing preferred routes (green alternatives, scenic routes etc)

Core problem

People drive to much.

This drives CO2 emissions, and also creates traffical and health problems.

A network of only buses will not get you where you need to go. Either you then travel by car (which we aim to avoid), or you need to be able to use a variety of transportation means.

The parts need to fit together.

We lack a seamless transport system – physically and also **digitally.**

add intelligense + unite travel solutions

Could we make this happen by creating a system for **unified planning** of transport, where all **the solutions** we have available could **play together?**

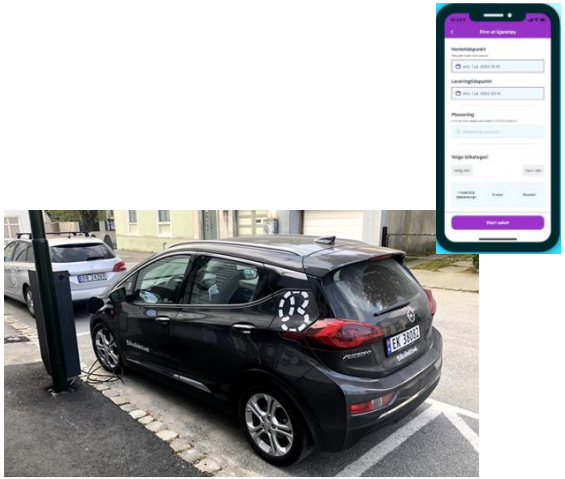
Could we add a **wayfinding** system to this to make such a system **user-friendly?** Why would you combine a bus trip with a bike trip if you worry about not finding the bike? **You should know you will find what you are looking for.**

Stavanger introduces new means of transport for employees

Bikes for rental

Stavanger kommune car pool

Market place for ordering taxi, with preference on EV

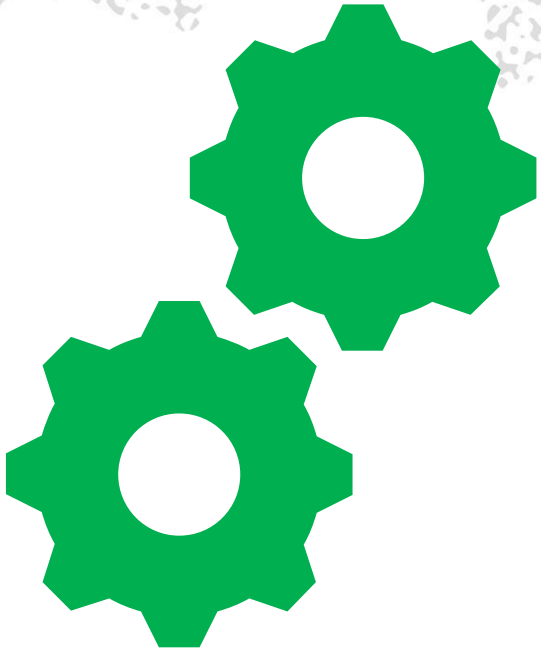


Stavanger kommune is a member of Bilkollektivet, a car pooling service.

For the sake of testing

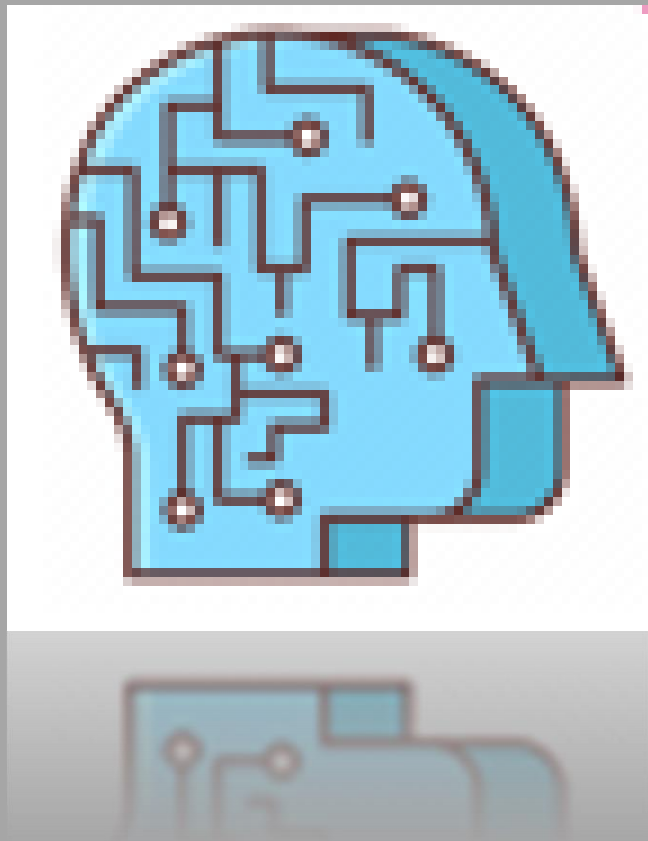
- Include also other means of transport?
- Test new bikes, e-scooters, cargo bikes or other?
- Testing the seamless system, testing the introduction.

- Test what we have / Test private solutions / Test solutions administrated by public transport actors



Why AI?

- AI will make it possible to predict and plan best ways of moving, conducting different routes, based on patterns of local and regional movement.
- Citizen can choose preferred alternatives and to different time
  - Due to weather conditions, green alternatives, convenience, if they carry load, need of universal design (universell utforming) etc
- AI for prediction of use, needs and necessary capasity
  - Including planning for special events; conserts, football matches etc



Criteria

- It is not all about the CO2, there are other factors to be considered:
- Priority to active modes of transport?
- Cost
- Familiarity
- Simplicity
- Time
- Preferred travel forms

- Personalised suggestions
- Personal preferences complicates the picture, AI useful.

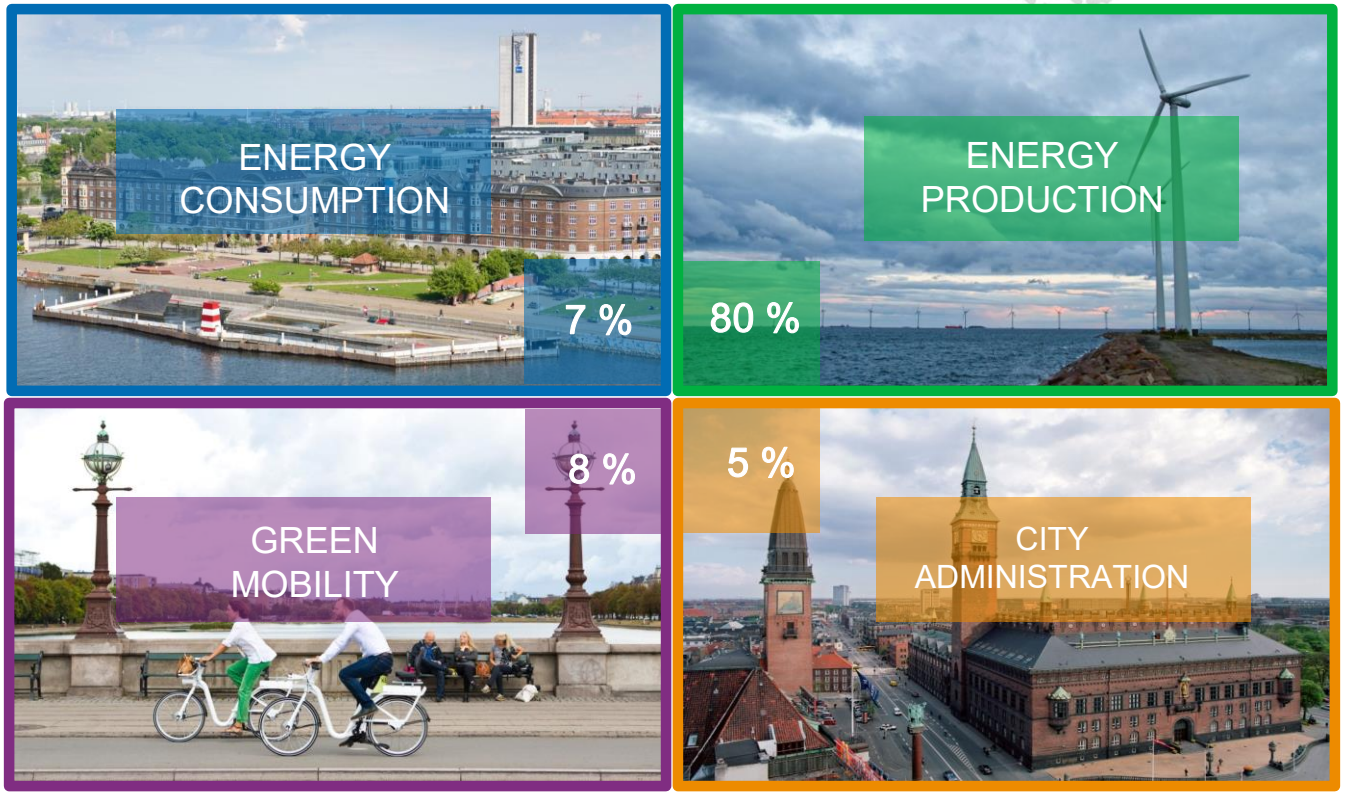
ENERGY (Lot 2)

City of Copenhagen

Tina Hjøllund
Senior Project Manager
City of Copenhagen

P: +45 2029 1408
E: tinahj@kk.dk

Climate Plan – CO2 neutral by 2025 i Copenhagen



Climate Plan

Energy Consumption

Efficient operation and installation
Renovation of building envelopes
Flexible energy use

Energy Production

Biomass in CPH
Flexible energy – Technology
Wind turbines
Ressources and waste

City Administration Initiatives

Municipal buildings
Municipal transport
Municipal procurement
Teaching and outreach

Mobility

World's Best City for Cyclist
Public transport
New fuels
Heavy transport

Energy Challenges in AI4CITIES

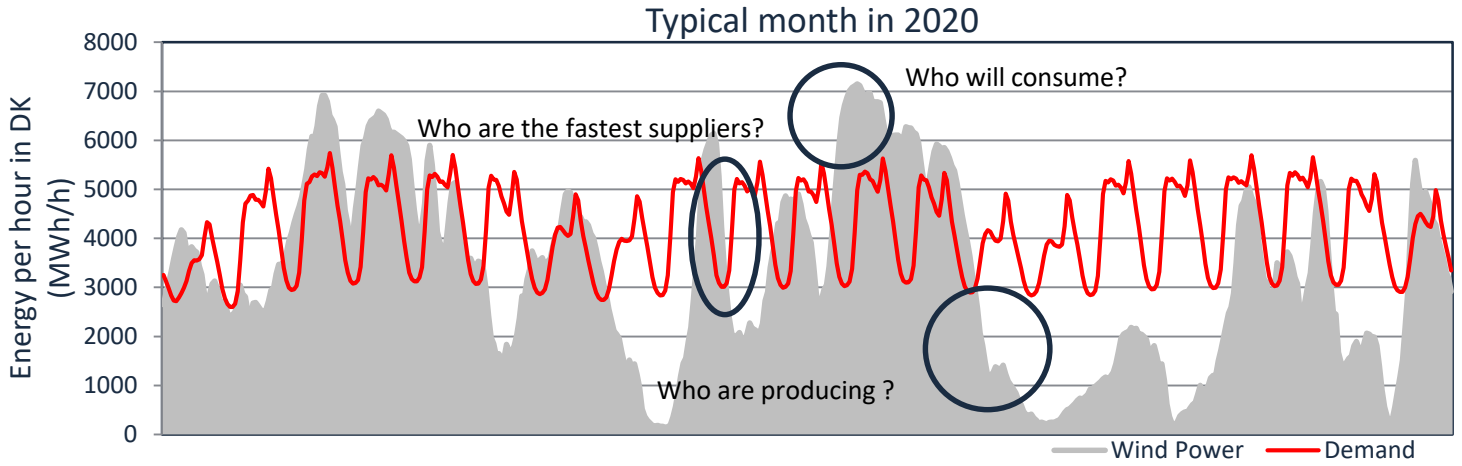
Public buildings

- Sustainability of the public buildings
- Flexibility, storages, use
- Energy and maintenance management and optimization in public buildings
- Ventilation, indoor climate

Infrastructure, utility

- Energy storage optimizing (electricity, heating, cooling, charging)
- Smart grid optimization (peak shaving, batteries, market signals) on personal and system level
- Optimal production of renewable energy sources (RES)
- Optimization and integration of public utilities (street lighting, charging stations)

50% wind already in 2020



Optimize use of energy

1. **What is the challenge?**

- Fluctuating energy production from renewable sourses
- Peak hours

2.

- **What is the potential impact?**
- Avoid new peak load powerplant runing on gas
- CO2 savings
- Reach our goal:CO2 neutral city by 2025

3.

- **How can we use AI here?**
- Flexibel energy use
- Communication between systems
- Optimeze maintaince systems

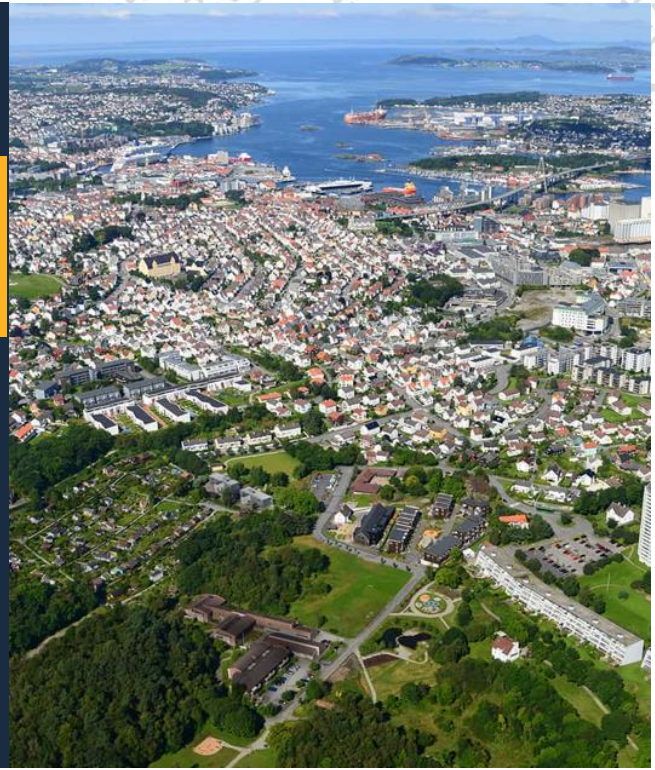
Open market consultation

Q&A

MOBILITY (Lot 1)

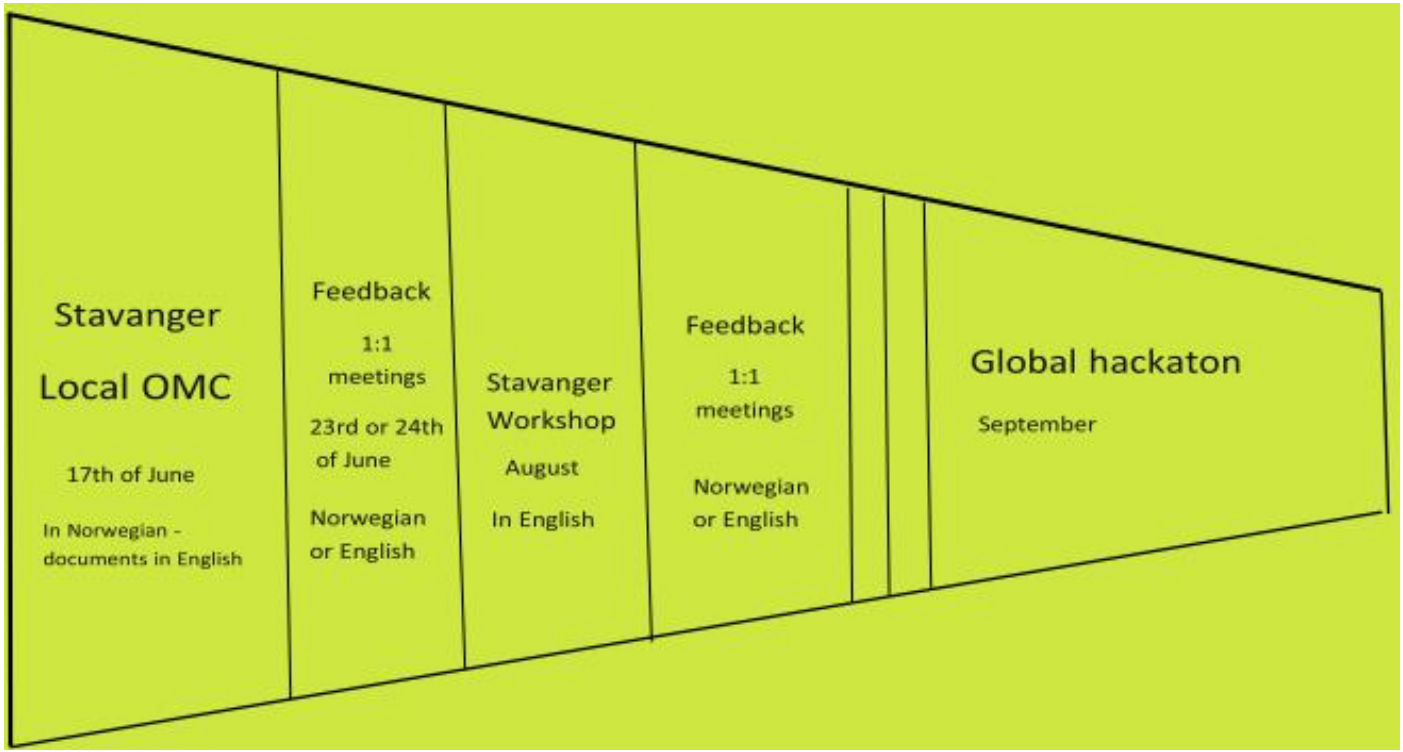
AI4Cities - webinar

City of Stavanger



Stavanger – AI4Cities

- Where du we go from here?
- Ka då ittepå?



Questions to you (added as document in Mercell)

How do you see the challenges?

What can we acheive by solving these issues?

What are the main challenges for you in such a task?

Is this interesting as a challenge for you?

Too ambitious / not ambitous enough?

Is this area in need of R&D? Is this realistic to test in 2022? Is this technically possible?

Can you contribute? How?
Model for financing?
Cooperating with others or solving on your own?
How could we change the challenge to improve it?

Other comments?

Action points (In Mercell)

- Input on the challenges / answer our questions

(+ add other comments)

- Register for 1 to 1 meetings.

Thank you!

More information www.ai4cities.eu and
www.stavanger.kommune.no/samfunnsutvikling/prosjekter/ai4cities

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