



# TWIN TRANSITION IN DANISH MUNICIPALITIES

Utilizing AI for the benefit of climate action.

27. September

1 pm – 3.30 pm

@Bitlab on CBS Campus



WHO IS TALKING?

# Facilitators & judges



**Camilla  
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Head of Data & BI - KOMBIT



**Ulrik  
Røhl**

Strategic adviser - KOMBIT

Post doctoral researcher - CBS



**Alberte  
Tscherning Jacobsen**

Sustainability Consultant -  
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**Karla  
Rickers**

Ph.d. candidate specializing in the  
"Digital Government Innovation  
and Sustainable Development  
Goals" – CBS & SDC



WHO'S TALKING?

# KOMBIT who..?

## Municipalities (98)

Local governance responsible for schools, infrastructure, waste management, water-supply, energy, district heating, local nature and culture and so on...



- KOMBIT is the joint municipal procurer of large IT-systems
- KOMBIT is owned 100% by Local Government Denmark (KL) the association and interest organization of the 98 Danish municipalities
- We are responsible for procuring, managing, operating and improving modern and stable IT solutions and infrastructure for the benefit of citizens and businesses.
- KOMBIT wants to gather green and digital ambitions to help the municipalities with the green transition



## AREAS OF FOCUS

# Why are we working with the green agenda?

- All municipalities have committed to meeting the targets of the Paris Agreement – reducing carbon emissions by 70 % or more before 2030
- To succeed with meeting these ambitious targets they need insights
- To document their targets, they need documentation / data
- Digitalization and data is a key element in securing insights and documentation through data
- Digitalization has significant potentials reducing carbon emissions from:
  - Transportation
  - Buildings
  - Manufacturing
  - Agriculture

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Digital technology could deliver one-fifth of the emission cuts we need to hit net-zero by 2050.

World Economic Forum



# Three pillars

## Reducing CO<sub>2</sub>-emissions of the community

How can data and information help reduce the CO<sub>2</sub>-emissions in local communities and public sector?



## Resilience in a changing climate

How can data and digital modelling help bolster our resilience against rising sea levels and extreme weather?



## Reducing the footprint of the digital industry

How can digital developments be part of the solution without adding to the problem?



# Utilize AI for the Benefit of Climate Action

- All Danish municipalities are taking part in a project called “The Climate Alliance”. One of the main goals of this project is for each municipality to reduce the carbon emissions within their geography by approximately 70 percent.
- To qualify and structure these ambitions every municipality have produced a climate action plan. These plans all refer to the methodology of the Climate Action Plan Framework (CAPF). But even so they are quite different, as the municipalities in themselves are quite different.

**CAPF** – The key components for municipalities:



### **Governance & Collaboration**

Detailing the city's governance, powers and the partners who need to be engaged in order to accelerate the delivery of the city's mitigation targets and resilience goals.



### **Resilience to climate hazards**

Demonstrating how the city will adapt and improve its resilience to the climate hazards that may impact the city now and in future climate change scenarios.



### **Emissions neutrality**

Developing a pathway to deliver an emissions neutral city by 2050 at the latest, and setting an ambitious interim target and/or carbon budget



### **Inclusivity and benefits**

Outlining the social, environmental and economic benefits expected from implementing the plan, and improving the equitable distribution of these benefits to the city's population.

# Utilize AI for the Benefit of Climate Action

- The Danish Statistical Bureau work with five different types of municipalities:
  - Landkommunerne (Rural municipalities)
  - Oplandskommunerne ( Suburban municipalities)
  - Provinsbykommunerne (Provincial municipalities)
  - Storbykommunerne (Big city municipalities)
  - Hovedstadskommunerne (Capital municipalities)
- The different types of municipalities are dealing with different types of issues and tasks in order to reduce their emissions. It can therefore be difficult to get a complete and helpful overview of the actions across the municipalities in order to learn from- and inspire each other across the country.



# Utilize AI for the Benefit of Climate Action

## Landkommunerne

Odsherred / Kalundborg / Lolland / Guldborgsund / Vordingborg / Bornholm / Svendborg / Langeland / Ærø / Haderslev / Billund / Sønderborg / Tønder / Fanø / Varde / Aabenraa / Lemvig / Struer\* / Norddjurs / Samsø / Ringkøbing-Skjern / Morsø / Skive / Thisted / Brønderslev / Frederikshavn / Vesthimmerlands / Læsø / Mariagerfjord / Jammerbugt / Hjørring

## Oplandskommunerne

Fredensborg / Frederikssund / Halsnæs / Gribskov / Holbæk / Faxe / Ringsted / Stevns\* / Sorø / Lejre / Middelfart / Assens / Faaborg-Midtfyn / Kerteminde / Nyborg / Nordfyns / Vejen / Syddjurs\* / Favrskov / Odder / Skanderborg / Ikast-Brande / Hedensted / Rebild

## Provinsbykommunerne

Helsingør / Hillerød / Køge / Roskilde / Slagelse / Næstved / Esbjerg / Fredericia / Horsens / Kolding / Vejle / Herning / Holstebro / Randers / Silkeborg / Viborg

## Storbykommunerne

Odense / Aarhus / Aalborg

## Hovedstadskommunerne

København / Frederiksberg / Ballerup / Brøndby / Dragør\* / Gentofte / Gladsaxe / Glostrup\*\* / Herlev / Albertslund / Hvidovre / Høje-Taastrup / Lyngby-Taarbæk / Rødovre / Ishøj / Tårnby / Vallensbæk\* / Furesø / Allerød / Hørsholm / Rudersdal / Egedal / Greve / Solrød

The five different types of municipalities as defined by the Danish Statistical Bureau (Ea Energianalyse, 2023)





# Utilize AI for the Benefit of Climate Action

- We are providing you with 15 climate action plans from the different categories of municipalities. Your task is to provide a method of getting a deeper knowledge and/or inspiration across the climate action plans – using AI.
- It is up to you if you want to focus on one type of municipality (e.g. Landkommunerne) – or if you prefer to analyze across the different types of municipalities.
- The number of plans is up to you, but we do expect you to include at least 2-3 climate action plans. Please present the argument for the chosen segment in your presentation.



# Questions for inspiration

- What is the Municipalities prioritization (CO<sub>2</sub>-reduction, finance, climate resilience)?
- What would be interesting for the municipalities to know?
- Which actions and goals do they have, and how can they get a deeper understanding of these from a cross-sectional perspective of the climate action plans?
- How will they effectuate their plans? And what can they learn about methods and processes from a cross-sectional perspective?
- What are the main value propositions of an AI-processing of the climate action plans in your segment?
- How do you design and communicate a clear approach to processing a cross-section of the climate action plans?
- How much can you trust what AI is telling you, how do you make sure that answers/conclusions are trackable, so we can find the empirical foundation behind these?



# Evaluation of the cases

- **Tell us your findings in a presentation (PowerPoint or something similar). They will be evaluated from these criteria:**
- What is the value proposition – How will your concept/method help the municipalities in their sustainable/green transition?
- Clear concept/description of your approach - It must be replicable.
- Trackability – Verification of information, making sure that AI is not hallucinating.
- Is it safe to use? Consider the element of risk in feeding data about our physical, geographical (and maybe even demographical) reality into AI-models.
  
- *Remember to include the argument of your chosen municipalities/climate action plans in your presentation*



# Practical information

- 13:15 – 14:15 Working on case
  - 14:15 – 14:25 Break & uploading presentations
  - 14:25 – 15:10 Presentations
  - 15:10 – 15:20 Evaluation
  - 15:20 – 15:30 Announcing the case winner
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- Groups of 4 people
  - You have 4 minutes to present your method/concept
  - Use the QR code to upload you presentation and relevant material. This is also where you will find this presentation and the 15 climate action plans.

