All the counselling that is happening to us

# Counselling 02-22-2023

* Writing a report for pre-project? When is the deadline?

We find agreement. Ask Marta.

* Calculation of wind speed at 100 m, what method to use?

Logarithmic is better for 10 m wind speed. Will interpolate using CMIP and access different height data and interpolate instead of extrapolating.

* 5MW turbine?

We approximate Gaussian the power curve instead of using the exact (not continuous)

For now, pick turbine, make code work, then find out how the impact is on final result.

* Irradiance (PV) is usually modeled 21 % better than reality, should it be reduced in our project?

NO! It applies only to that specific research paper.

* Scripts from past MSc projects

Waleed hasn’t uploaded them, yet :D

* Table 2 - Capital cost of technologies

Use GitHub repository for costs that PyPSA community has.

* How is the exam conducted?

Prepare report and oral discussion (20-30 pages).

Notes from Ebbe:

* Atlite: Use version mentioned in Marta’s guide (same as Waleed used)
* Download from ESGF
* ERA5 vs UERRA

**To do:**

* Find requirements in course catalogue.

# Counselling 03-01-2023

Update:

* Download Atlite – Xarray is being annoying
* Talking about UERRA vs ERA5

Questions:

* .nc and CMIP - we didn’t have all values (rsus, rdsd, tas, sfcwind and mrro
* UERRA – what variables do we need to determine irradiance / PV production?
  + Maybe not use UERRA for PV but only for wind if it is more suitable there

General advice:

* Make a script that compares the values from e.g. ERA5, ENTSO-E, European wind atlas etc. to historical data.
* Then later reuse script with CMIP6 data.

<https://transparency.entsoe.eu/generation/r2/actualGenerationPerProductionType/show?name=&defaultValue=true&viewType=TABLE&areaType=BZN&atch=false&datepicker-day-offset-select-dv-date-from_input=D&dateTime.dateTime=01.03.2023+00:00|CET|DAYTIMERANGE&dateTime.endDateTime=01.03.2023+00:00|CET|DAYTIMERANGE&area.values=CTY|10Y1001A1001A65H!BZN|10YDK-1--------W&productionType.values=B01&productionType.values=B02&productionType.values=B03&productionType.values=B04&productionType.values=B05&productionType.values=B06&productionType.values=B07&productionType.values=B08&productionType.values=B09&productionType.values=B10&productionType.values=B11&productionType.values=B12&productionType.values=B13&productionType.values=B14&productionType.values=B20&productionType.values=B15&productionType.values=B16&productionType.values=B17&productionType.values=B18&productionType.values=B19&dateTime.timezone=CET_CEST&dateTime.timezone_input=CET+(UTC+1)+/+CEST+(UTC+2)>

<https://map.neweuropeanwindatlas.eu/>

# Councelling 03/15

* Solar layout – we do not have access to information about where PV installations are located for every country.
* PVlib
* Waleed gets CF directly from ERA-5??? Does it make sense to calculate CF ourselves when many others have done it (e.g. PVlib)?
* What did Ebbe mean with the comparison thing from 03-01-2023???

# Counceling 03/29

* Large files in Github – do we have to pay? Or do we have the plan through AU?
  + Store data elsewhere ☹
* Timeconsuming preparing cutouts – easy fix?
  + Shouldn’t be problem with CMIP6.
* Should we define windturbine in atlite ourselves? Or is using a reference one of 5.5MW OK?
  + Play around with it.
* How to know which 15 GCM’s?
  + Not so important, don’t worry.
* The land use availability function from atlite seems weird.
  + Should we use? And how?
  + Mountains show up as being useful which they aren’t really. Should be possible to exclude mountains.
* How do we include offshore areas?
  + Focus first on onshore 🡪 then look at offshore.
  + Depth constraint
* Cap\_per\_sqkm:
  + Try out different ways to define it.
* Cluster?
  + Ebbe looks at it.
* Capacity proportional may be an option in atlite. Research “layout” according to solar example for Germany.

# Councelling 04/12

Update:

* We have written Søren about access to cluster.
* Have looked at the Corine codes.
* Are choosing the 15 GCM’s

Questions:

* Cutout using CMIP instead of era5 as module?
  + Try to make the modules less recent / downgrade packages.
  + Make new environment with downgrades fitting to:

https://github.com/Ovewh/atlite/blob/master/environment.yaml

* + - Try to install the yaml file directly into the new environment.

Others

* For validation – duration curve, CF’s avg, frequency spectra (Fourier), seasonality (do seasonal profiles).
  + 1 year is sufficient, that’s nice because we have data for 2 😊
* For now it is fine with evenly distributed instead of proportional regarding land use.
* Try and look into the regional distribution (look at the paper by Andrea, they have good metrics to evaluate