

Klimaaftryk – hvad ved vi om den
økologiske griseproduktion?

Climate footprint - what do we know about
organic pig production?

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Agenda / Dagsorden

- ***Methods / Metoder***
- ***Results / Resultater***
- ***Conclusions / Konklusioner***

Methods / Metoder (1)

- Data collected from all the farms in the POWER project
 - Data was collated and checked for consistency
 - Making sure that the pig numbers add up; *sows, cycles, sales etc*
 - Does the feed produced or bought meet the feed rations of the pigs
 - Data entered into a farm model, for both breeding and finishing pig systems
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- Data indsamlet fra alle bedrifter i POWER-projektet
 - Dataene blev samlet og kontrolleret for konsistens
 - Det blev sikret, at svinetallene passer sammen; søer, cyklusser, salg osv.
 - Er det producerede eller indkøbte foder i overensstemmelse med svinenes foderrationer?
 - Data indtastes i en bedriftsmodel for både avls- og slagtesvinesystemer

Methods / Metoder (2)

- Modelled systems connect to lifecycle assessment inventories
 - Each input has a „footprint“ or „impact“
 - The system outputs can be:
 - Animals, meat (or other products), or
 - Environmentally relevant outputs such as greenhouse gases, nitrates etc
 - Finally, check all data is consistent and benchmark results against other systems (many refinements at this stage)
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- Modellerede systemer forbindes med opgørelser over livscyklusvurderinger
 - Hvert input har et "fodafttryk" eller en "påvirkning"
 - Systemets output kan være:
 - Dyr, kød (eller andre produkter) eller
 - miljømæssigt relevante output som f.eks. drivhusgasser, nitrater osv.
 - Endelig kontrolleres det, at alle data er konsistente, og resultaterne benchmarkes i forhold til andre systemer (mange finjusteringer på dette stadium).

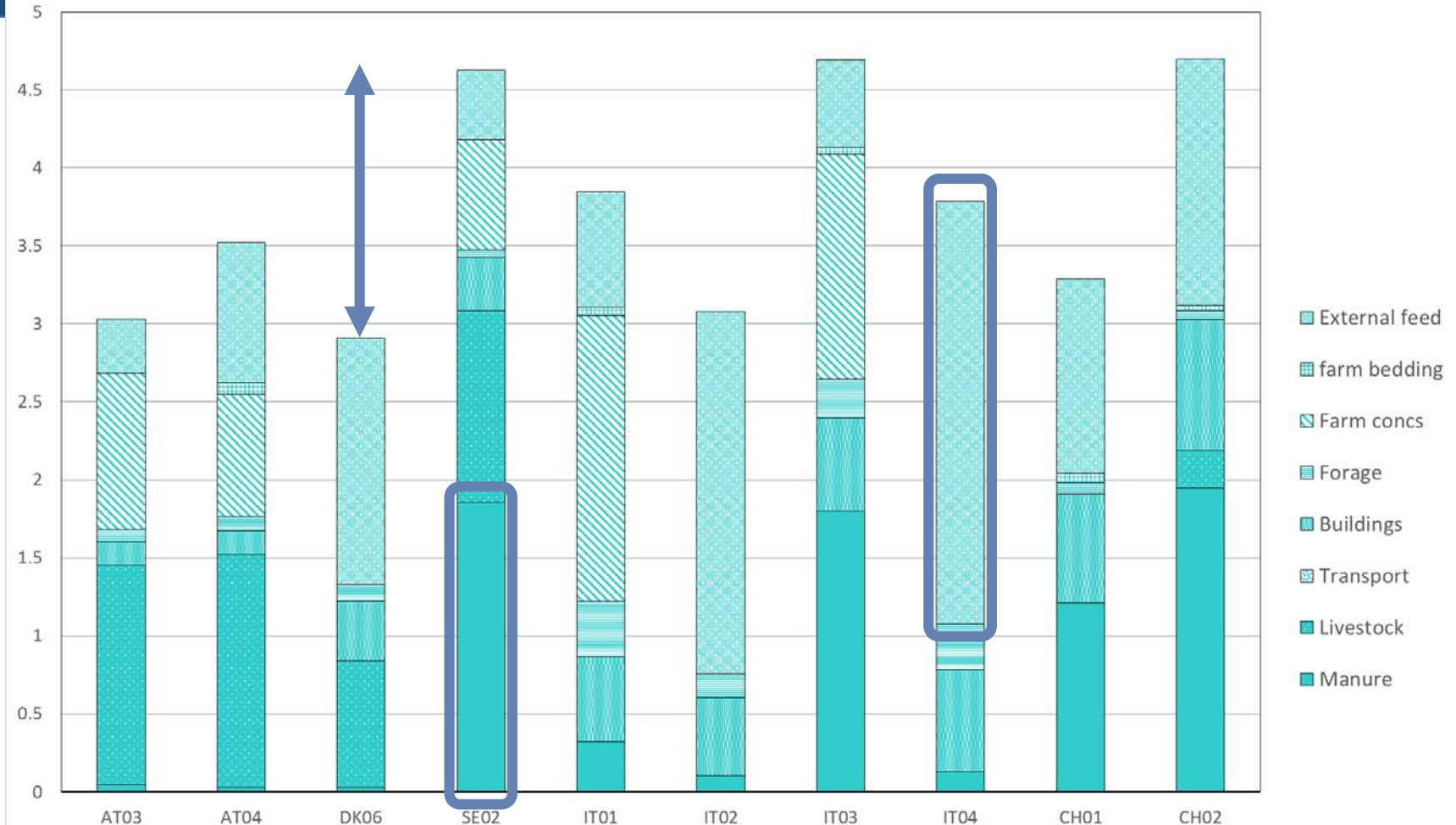
Methods / Metoder (3)

- We have assessed four main categories of environmental impacts:
 - Greenhouse Gases (carbon dioxide, methane, nitrous oxide)
 - Terrestrial eutrophication (nitrogen air pollution)
 - Marine eutrophication (water pollution from nutrient losses)
 - Water footprint (regionalised)
- Vi har vurderet fire hovedkategorier af miljøpåvirkninger:
 - Drivhusgasser (kuldioxid, metan, lattergas)
 - Terrestrisk eutrofiering (luftforurening med kvælstof)
 - Marin eutrofiering (vandforurening som følge af tab af næringsstoffer)
 - Vandfodaftryk (regionaliseret)

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- Stacked bar chart showing the distribution of waste types across 13 scenarios. The y-axis represents the quantity (0 to 12). The x-axis lists scenarios: AT01, AT02, DE01, DK04, DK05, DK07, SE01, IT01, IT02, IT03, IT04, CH01, and CH02. The legend includes: External feed, farm bedding, Farm concs, Forage, Buildings, Transport, Livestock, and Manure. Annotations include a blue double-headed arrow between DK04 and AT02, and blue boxes around the Manure and Buildings segments in AT02, SE01, and IT04.

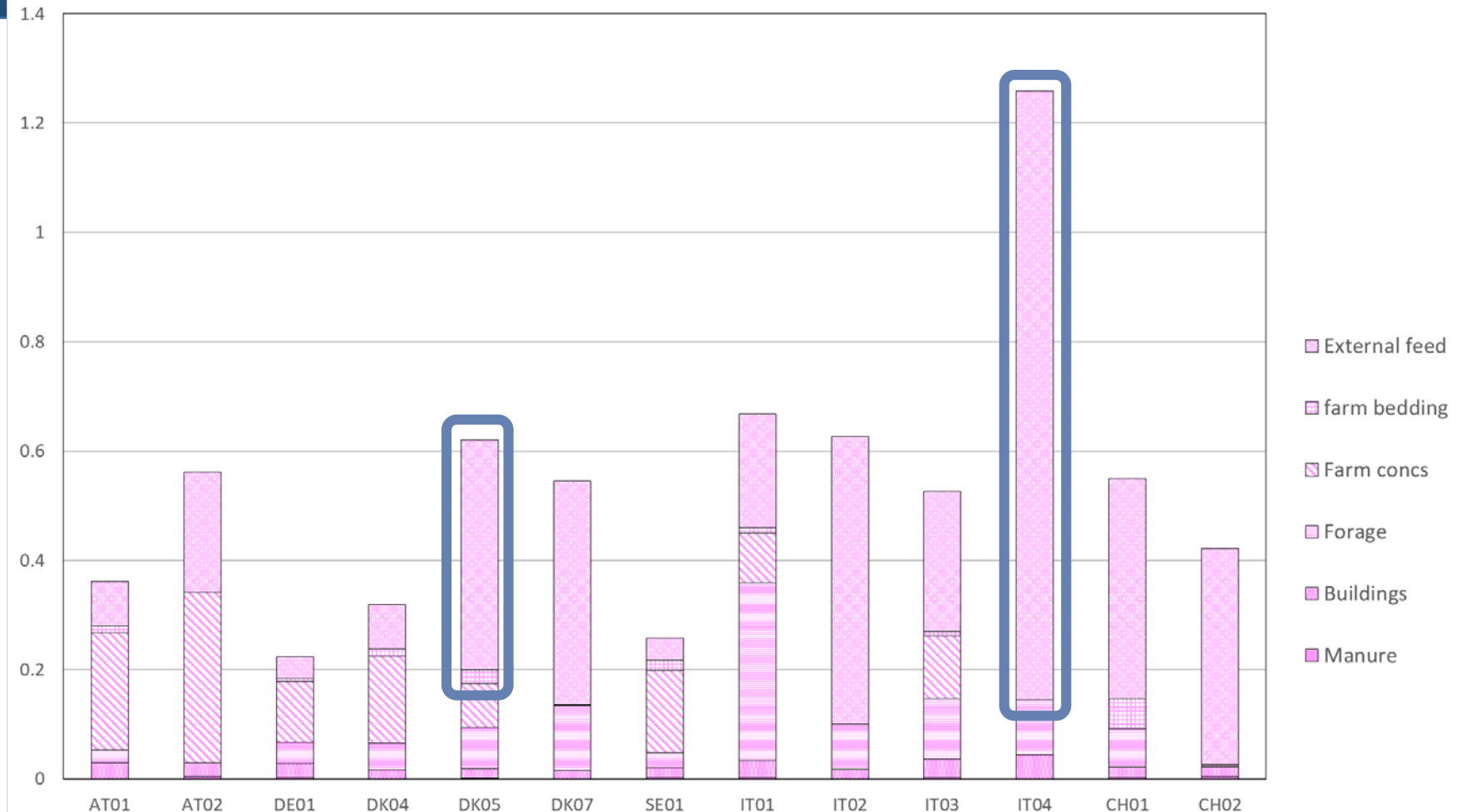
Results / Resultater: *Finishing pigs – GHGs / Slagtesvin - drivhusgasser*

- GHGs more similar
- Manure emissions
 - Housing time
 - Storage
- Feeds
 - Rearing period
 - Where feed produced
- GHG'er mere ens
- Gødningsemissioner
 - Staldtid
 - Opbevaring
- Foder
 - Opdrætsperiode
 - Hvor foderet er produceret



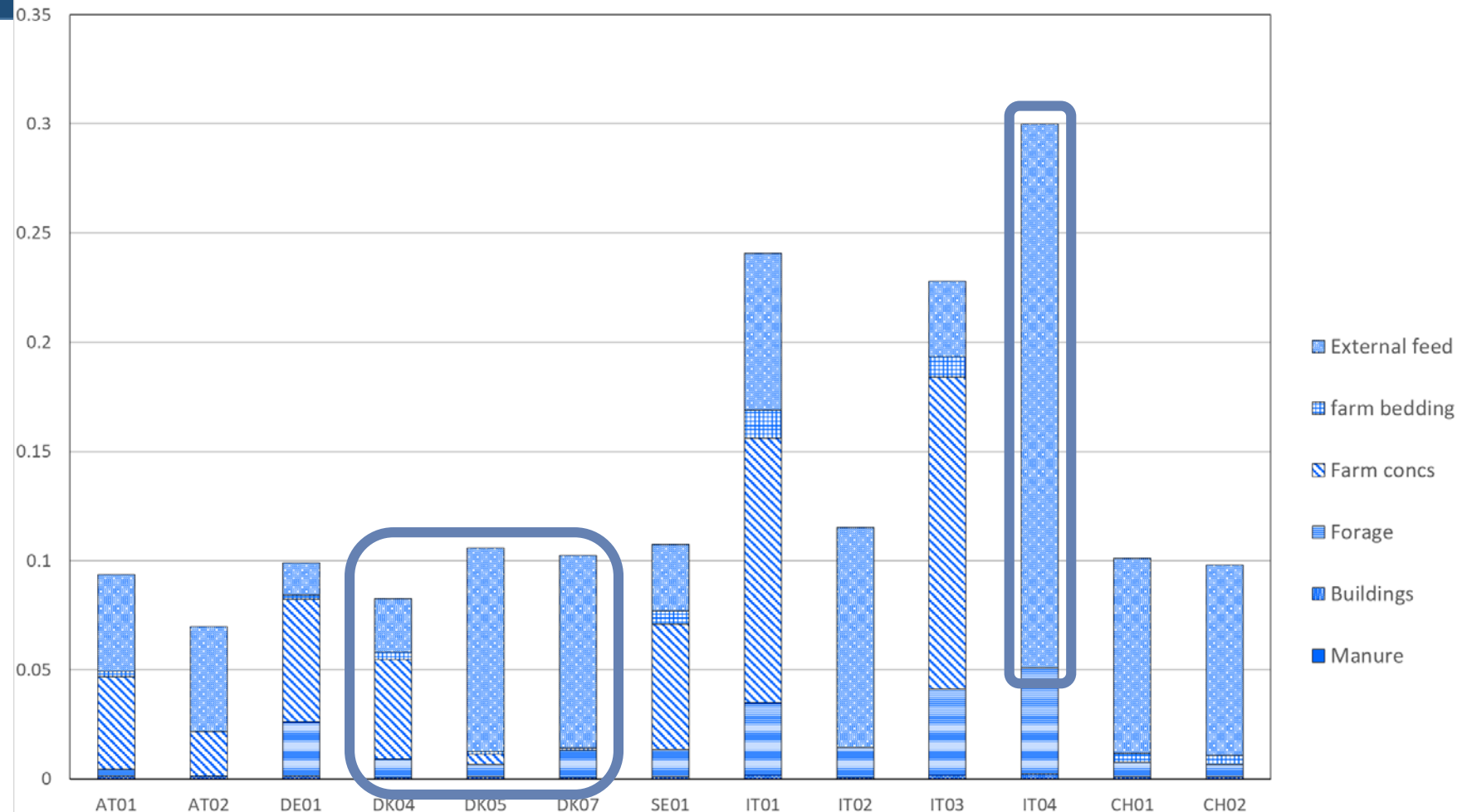
Results / Resultater: *Breeding pigs – Air pollution / Avlssvin - Luftforurening*

- Large range in values
- Feeds
 - External feeds
 - Feeding period
- Stor spændvidde i værdierne
- Foder
 - Eksternt foder
 - Fodringsperiode



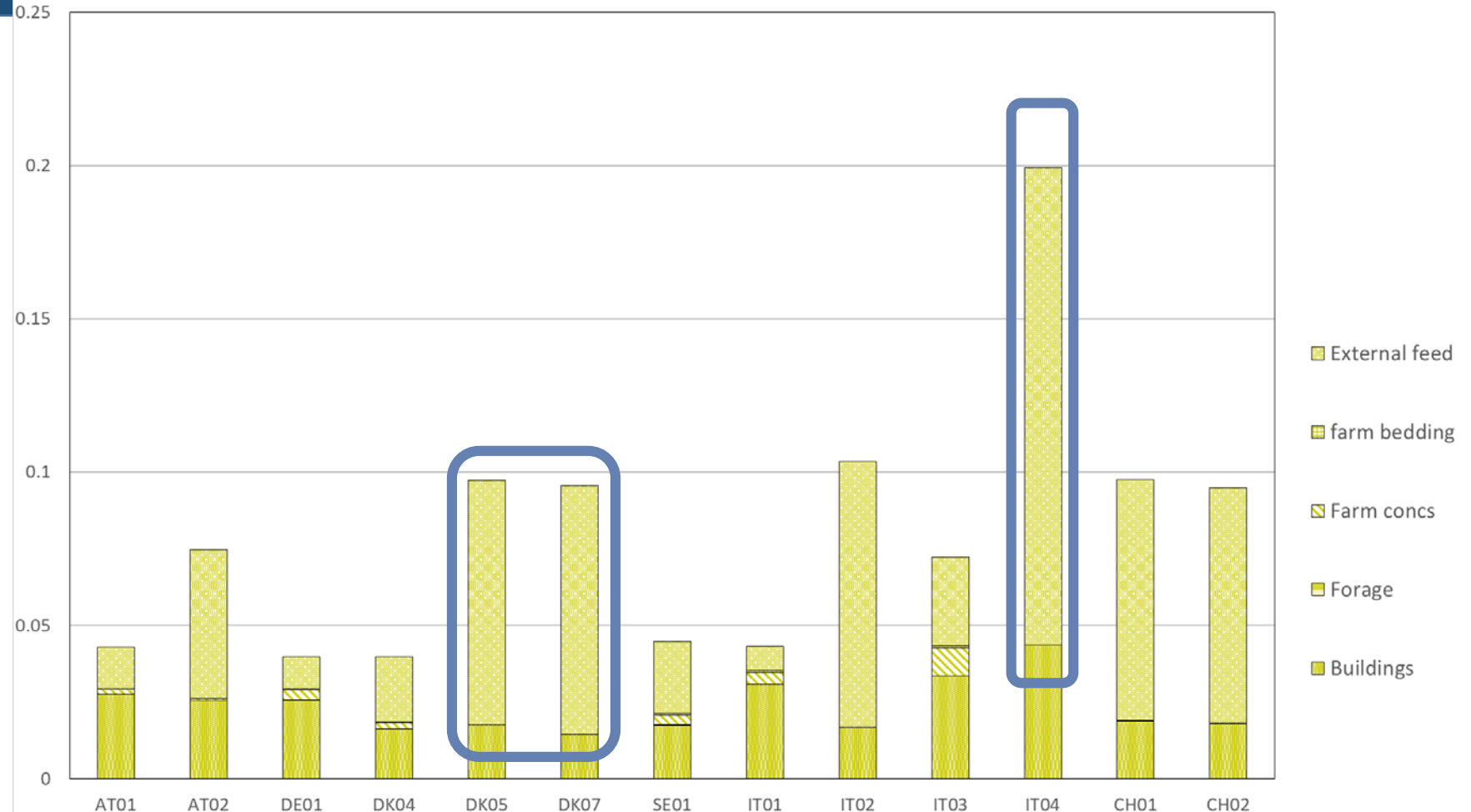
Results / Resultater: *Breeding pigs – Water pollution/ Avlssvin - Vandforurening*

- Large range in values
 - Mainly due to length of feeding period
- Feeds
 - Less water pollution in local feed production
- Stor spændvidde i værdierne
 - Hovedsageligt på grund af længden af fodringsperioden
- Foder
 - Mindre vandforurening i lokal foderproduktion



Results / Resultater: *Breeding pigs – Water footprint / Avlssvin - vandfodaaftryk*

- Large range
- Feeds
 - External feeds have highest impacts
 - Quantity used
- Stort udvalg
- Foder
 - Ekstern foder har størst indvirkning
 - Anvendt mængde



Conclusions / Konklusioner

- Environmental impacts lower for outdoor systems that are also efficient:
 - Housing = manure production and storage has high impacts
 - Feed production and usage also creates significant impacts
 - Production and use of own feeds improves nutrient circularity and reduces water use
 - Lower stocking density and rotation of pigs in outdoor systems helps avoid the potential of excess nutrient losses
- Miljøpåvirkningerne er mindre for udendørs systemer, der også er effektive:
 - Staldbygninger = produktion og opbevaring af husdyrgødning har store konsekvenser
 - Produktion og anvendelse af foder har også en betydelig indvirkning
 - Produktion og anvendelse af egne foderstoffer forbedrer cirkulariteten af næringsstoffer og reducerer vandforbruget
 - Lavere belægningsgrad og rotation af svin i udendørs systemer bidrager til at undgå potentielt for stort tab af næringsstoffer

Questions / Spørgsmål



POWER meeting October 2021

