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## Session C2: How Migrating Fish Survives Between Law, Politics, and Permits for Hydropower

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# **How migrating fish survives between law, politics, and permits for hydropower**

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# Dilemma: do we allow development of new hydropower plants?

- Request of a permit for new hydropower plant
- At planned plant site migrating fish will be killed/injured when passing
- Which decision do we take?  
Yes or no powerplant?



# It is a Yes! We need more hydropower

- Promotes sustainable development
- Contributes to the national renewable energy objective in 2020, 20% renewable energy
- In line with EU directive on sustainable energy
- Stakeholders / Companies are ready for it
- Hydropower has a green image amongst the general public



# It is a No! We need to improve fish migration

- EU Eel Regulation is aiming at restoration of eel population till 40% of its natural size (now <1%)
- WFD sets clear objectives for migrating organisms, mitigation measures are obliged, compensation if WFD measures are taken
- Water managers in the NLs are spending millions of euros in restoration of fish habitats and migration routes
- Stakeholders e.g. sport fishery are keen on restoration of fish populations



## Call for a guideline

- A number of court cases
- National program for subsidizing hydropower
- Different regional competent authorities
- A lot of questions in the national Parlement (earlier in favor for 'yes', later more balancing between 'yes' and 'no') after permits and court cases
- Provides politicians a 'principle' for making decision in the dilemma 'yes' or 'no'
- From law and policies to concrete numbers of fish mortality



# Content of the guideline

- In two main trajects cumulative fish mortality should be lower than 10% of the potential passing fish for both eel and salmon as test species
- If this level is already exceeded new projects are only allowed when  $<0.1\%$  is ensured
- Other water bodies important for fish migration  $<0.1\%$  mortality
- Best Available Techniques are needed
  
- Intensive cooperation between ecologists, lawyers, policy makers and included a consultation process amongst stakeholders



# And what are the consequences?

## EXISTING PLANTS (c.10MW plant):

- All present large plants cause more than 10% cumulative mortality for both eel and salmon in the trajects
- High effort is paid to reduce mortality via new techniques (new developments in turbines)

## NEW PLANTS (c.2MW and at existing weirs):

- Several plants have a (draft) permit with 0.1% mortality rate
  - Small part of the river discharge
  - Screen protection
  - Side channels, low velocity etc.



# Conclusions

- Large gap between policies and law on the one hand, and decision on permits on the other hand
  - Guidelines make policies and laws transparent and clear
  - In this conference more about migration of fish and the role of hydropower and other pressures in sessions:
    - A.W. Breukelaar; Downstream migration of 2+ salmon smolts (*Salmo salar*) in the river Meuse in the Netherlands with special attention to the effects of passing hydro power stations and the loss of fish by predation  
14.45 Sturgeon Room
    - F.T. Vriese; Downstream migration of silver eel (*Anguilla anguilla*) in the river Meuse in the Netherlands 2008 – 2012, Tuesday 14.15 Happy Fish Room
- And presentations about River Rhine...



## Thanks to

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