WG4 – Approach to reducing nitrogen emissions/deposition from agriculture in the UK/England

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December 2013
Natura 2000 network in the UK

i) SACs (green) & SPAs (blue)

ii) Critical load exceedance

Exceedance
keq/ha/yr
(kg N/ha/yr)

- Not exceeded
- <= 0.5
- 0.5 - 1.0
- 1.0 - 2.0
- > 2.0

(<= 7)
(7-14)
(14-28)
(> 28)
Agriculture in the UK

- Over 70% of UK land is farmed
- Grass pasture for livestock in N & W
- Arable land concentrated in S and E
- Pig and poultry tend to be along the E but also in the SW
Programmes and levers: regulation

- Town and Country Planning Act
- Environmental Impact Assessment Regulations
- Environmental Permitting Regulations

- EPR applies to farms with more than:
  - 75 sows (33 permits)
  - 2000 production pigs > 30kg (159 permits)
  - 40,000 poultry places (982 permits)

- EPR-permitted farms contribute 4% of UK NH3 emissions (2010) but local hotspots
Modelled process contributions must not exceed agreed thresholds

Mitigation required where thresholds are predicted to be exceeded
- New technologies
- Pre-app screening
- Local sites

Regulation: permitting driving innovation
Case study: improvement conditions

- Improvement conditions placed on existing farms where NH3 emissions were predicted to exceed critical levels at designated sites and where site survey indicated N impacts

- Existing poultry farm adjacent to designated site
- Housing considered BAT
- Operator identified heat exchangers
- Operator-led monitoring trial:
  - Significant (35%) NH3 reductions
  - Improved energy efficiency
Programmes and levers:

2. Incentives and Advice

- Code of Good Agricultural Practice
- Farm advice
- Environmental Stewardship
- Capital grant schemes
- Catchment Sensitive Farming
Catchment Sensitive Farming


- Fertiliser management
- Manure management
- Infrastructure
- Soil management
Industry-led initiatives – ‘Tried & Tested’

• Helping better manage organic and inorganic fertilisers (storage and spreading techniques) to reduce nutrient loss to water and through ammonia volatilisation.
• Integration of water and air objectives.
• Innovative industry-led initiative.
Farmer engagement
Benefits, drivers and challenges

- **Benefits**
  - Climate change
  - Human health
  - Energy
  - Feed/diet
  - Manure use
  - Animal welfare

- **Drivers**
  - BRef
  - Installations
  - WFD
  - Land and water quality
  - NVZ
  - SSAFO
  - Greenhouse gas action plan
  - Climate change
  - Resource efficiency
  - CAP2014+

- **Challenges**
  - Whole cycle solutions vs. part solutions
  - Cost of adopting new technology
  - Technology cost
  - Cost of farm-level NH3 monitoring
  - Evidence to support effectiveness of new technologies
  - Pollutant swapping
  - N to air vs. N to soil
  - Spreading vs. burning
  - Engagement with industry/operators
CAP 2014+ and the new Rural Development Programme

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<th>Woodland creation: tree buffers</th>
<th>Storage: Covering slurry &amp; manure stores</th>
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<th>Animal housing: Low emission systems</th>
<th>Land spreading: Low emission slurry spreading techniques</th>
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