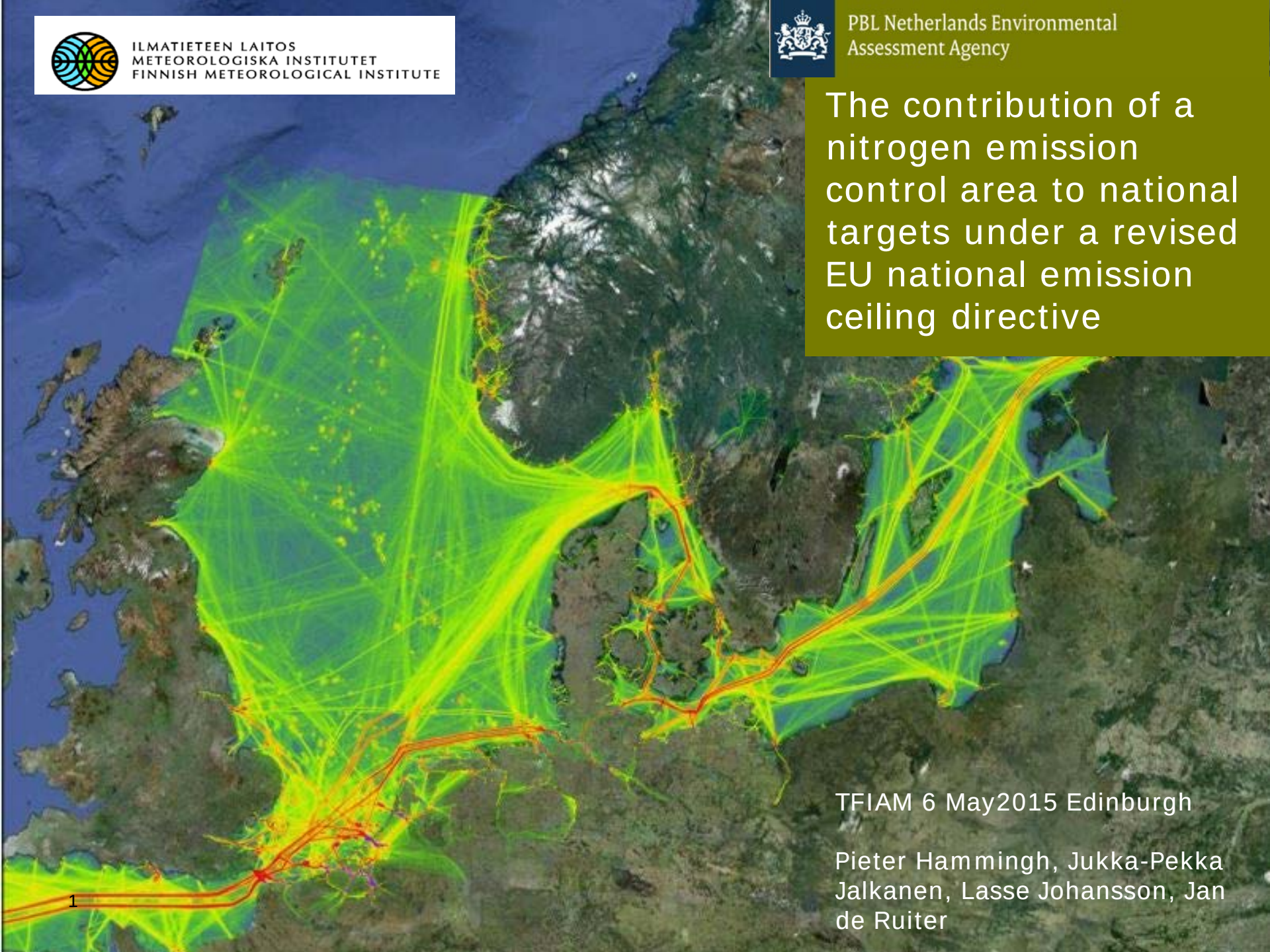

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PBL Netherlands Environmental Assessment Agency

The contribution of a nitrogen emission control area to national targets under a revised EU national emission ceiling directive

TFIAM 6 May2015 Edinburgh

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Take home messages

- Shipping NO_x cuts offers limited but relevant flexibility;
- If we believe that the flexibility contributes to the support in Member States for nitrogen emission control areas this may well be a ‘good enough compromise’;
- The flexibility rules probably need adjustment in order to clarify what measures qualify for offsetting and those that do not.

Shipping policies under a new NECD?

- Article 5: flexibility to replace (offset) part of the required reductions from land by reductions in international shipping:
  - NO_x, SO_2, $PM_{2.5}$ reductions (2025,2030) qualify for offset;
  - emission reductions within EU-MS territorial waters, EEZ;
  - measures qualify that achieve lower emissions from int. shipping than that would be achieved by Union standards;
  - they have not offset more than 20% of the reductions in shipping;
  - demonstrate adequate quantification, effective monitoring.

Reductions by a NECA per Exclusive Economic Zone

Method

1. collect spatially distributed NO_x emission inventories:
2. determine emissions per EEZ using GIS tools;
3. derive an average relative contribution per EEZ to totals;
4. distribute total reductions by a NECA in 2030 over EEZs, apply the '20% rule'
5. compare offset potentials with NO_x targets for EU-MS

NO_x projections CLE and NECA impacts

Table 2.1 Nitrogen oxide emission projections and NECA impacts, for the North Sea, for 2030

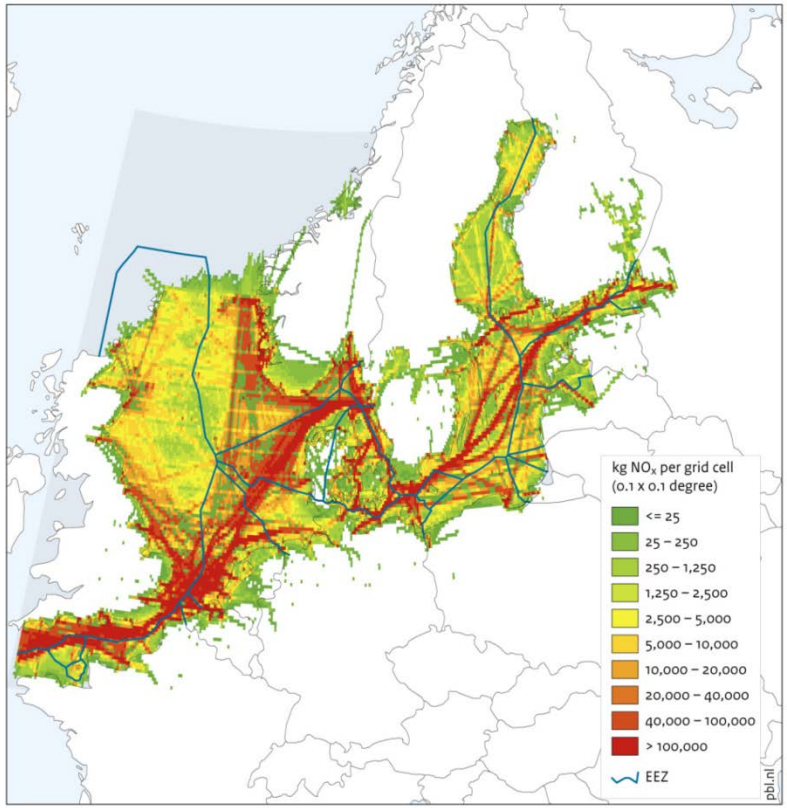
Source	NO_x base year emissions [kt]	NO_x emissions by 2030 under current legislation [kt]	NO_x emissions by 2030 under NECA implementation in 2016 [kt]	NO_x emission reductions by 2030 due to NECA implementation [kt]
PBL, 2012	472 (2009)	448	319	129[1]
Jonson et al., 2015	662 (2009)	642	457	185
VITO, 2013[2]	518 (2005)	503	269	234

Table 2.2 Nitrogen oxide emission projections and NECA impacts, for the Baltic Sea, for 2030

Source	NO_x base year emissions [kt]	NO_x emissions by 2030 under current legislation [kt]	NO_x emissions by 2030 under NECA implementation in 2016 [kt]	NO_x emission reductions by 2030 due to NECA implementation [kt]
Jonson et al., 2015	314 (2009)	293	217	76
VITO, 2013[1]	220 (2005)	202	108	94

GIS analysis

NO_x emissions North Sea and Baltic Sea, 2009



Source: Finnish Meteorological Institute, PBL

NO_x emission reductions per EEZ: first results!

Table 3.7 Nitrogen oxide emission reductions for international shipping by 2030, per EEZ, that can be used in offsetting under the new NECD proposal

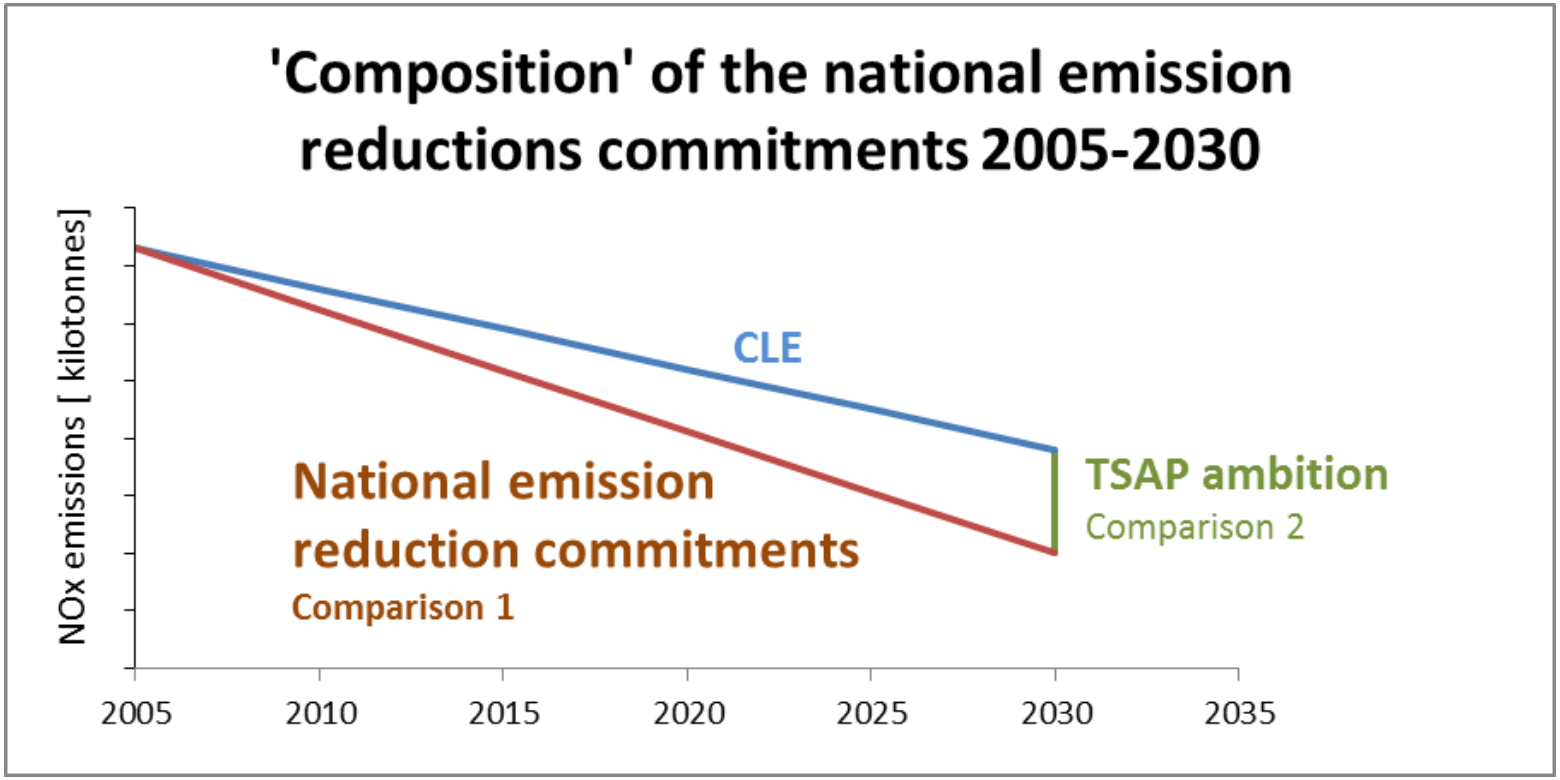
Country	Nitrogen oxide emission reductions per EEZ [kilotonnes, 20% of total reduction]		
	2030 [PBL, 2012]	2030 [Jonson et al., 2015]	2030 [VITO, 2013]
Belgium	1	1	2
Denmark BAS+NOS	*	7	9
Estonia	*	1	2
Finland	*	2	3
France	2	3	4
Germany BAS+NOS	*	4	5
Latvia	*	0	1
Lithuania	*	0	0
Netherlands	6	8	10
Norway#	-	-	-
Poland	*	1	1
Russia#	-	-	-
Sweden BAS+NOS	*	5	6
United Kingdom	9	13	17
Total	**21**	**52**	**66**

* No estimate given since no gridded inventory was prepared in that study for the Baltic Sea

Not an EU Member State

NOS= North Sea, BAS= Baltic Sea

Two types of comparison to national NO_x targets



Comparison 1: ERC 2005-2030

Table 3.9 NECA contribution to the recalculated overall NO_x reduction targets by 2030 for Member States based on IIASA (2015)

Country	Overall national NO_x reduction targets for 2030 [Table 7.8 in IIASA, 2015] [kt]	Relative NECA contribution by 2030 to the overall national NO_x reduction targets [%]		
		2030 [PBL, 2012]	2030 [Jonson, 2015]	2030 [VITO, 2014]
Belgium	179	0.6%	0.8%	1.0%
Denmark BAS+NOS	117	0.0%	6.2%	7.8%
Estonia	17	0.0%	7.4%	9.1%
Finland	87	0.0%	2.4%	2.9%
France	966	0.2%	0.3%	0.4%
Germany BAS+NOS	910	0.0%	0.5%	0.6%
Latvia	17	0.0%	2.8%	3.5%
Lithuania	25	0.0%	0.6%	0.7%
Netherlands	222	2.6%	3.7%	4.6%
Norway	nd	nd	nd	nd
Poland	396	0.0%	0.2%	0.2%
Russia	nd	nd	nd	nd
Sweden BAS+NOS	132	0.0%	3.9%	4.8%
United Kingdom	1126	0.8%	1.2%	1.5%
Total	4194	0.5%	1.2%	1.6%

nd = no data as these countries are not EU Member States and EU targets do not apply
NOS= North Sea, BAS= Baltic Sea

Comparison 2: TSAP ambition

Table 3.11 relative contribution of a NECA to the re-calculated 'additional' NO_x emission reduction targets per EU member state in 2030, results based on three different inventories

Country	Sea	Recalculated additional NO_x emission reduction targets for 2030 (Table 7.8 in IIASA, 2015)	NECA contribution to the recalculated targets for 2030, under the NECD proposal		
			PBL [2012]	Jonson [2015]	VITO [2014]
Belgium	North Sea	9	11%	16%	21%
Denmark	North Sea + Baltic Sea	3	ne	243%	304%
France	North Sea	27	8%	12%	15%
Germany	North Sea + Baltic Sea	48	ne	9%	11%
Latvia	North Sea	1	ne	48%	59%
Netherlands	Baltic Sea	9	63%	90%	114%
Poland	North Sea	14	ne	5%	6%
United Kingdom	North Sea	37	25%	36%	45%

Table 7.8 in IIASA (2015). ne= not estimated

Conclusions

- Comparison 1, NECA contributions to the ERC:
  - 4%–9% for Estonia, Denmark, Sweden and the Netherlands;
  - 1-4% for Latvia, Finland and the United Kingdom;
- Comparison 2, NECA contributions to the 'TSAP ambition':
  - Denmark can offset its TSAP ambition completely;
  - NL and the UK can offset a large part of their TSAP ambitions;
- The NECA offset in 2030 may result in ~70 kt less reductions at land against 200-300 kt additional reductions in shipping.
- Postponing the NECA implementation 2016→2021 may halve its contribution under the NECD in 2030

Status 'offset flexibility' in co-decision procedure

- EP Draft report '**ENVI** Committee' 23-03-2015:
  - Article 5 is deleted and this is explained by:
    - The Commission's proposed shipping flexibility to deal with maritime emissions is convoluted, burdensome to apply, and conflicts with the Commission's better regulation agenda. Given that not all Member States could avail themselves of this flexibility, this could lead to an unfair market distortion and a failure to achieve desired health outcomes across the EU.
- EP Opinion '**ITRE** Committee' 22-04-2015:
  - Recital 11: reductions from shipping included, Article 5 deleted.
- **Council pres.** compromise text 23-05-2015: article 5 deleted.

Arguments against the offset flexibility

- EP says '…convoluted, and burdensome to apply…':
- Land-locked countries play their 'level playing field card';
- The offset is said to increase complexity unnecessarily;
- The offset is said to water down the ambition for air quality improvement.

Arguments in favor of the offset flexibility

- It could provide an important incentive to countries involved in the decision making proces over NECAs and could speeds up the decision making proces;

- It may contribute to a cost-optimal air quality policy but this needs to be re-assessed.