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English - Or. English

ENVIRONMENT DIRECTORATE
ENVIRONMENT POLICY COMMITTEE

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Working Party on Biodiversity, Water and Ecosystems

Human Impacts on the Nitrogen Cycle: Policy Questionnaire

6th Meeting of the WPBWE

27-28 May 2014, OECD Headquarters, Paris

This is a revised version of the questionnaire for the project on humans' impacts on the nitrogen cycle -- 2013-14 PWB Item 2.3.2.3.3 Humans' Impacts on the Nitrogen Cycle.
The revisions reflect discussions during the first call of the Nitrogen Expert Group (NEG), which took place on May 23 via videoconference. Twelve countries participated in the call (Belgium, Canada, China, Estonia, France, Germany, Korea, Japan, New Zealand, Sweden, Switzerland, United Kingdom) as well an independent expert. The NEG also includes Austria, Chile and the United States, as well as BIAC.
The Secretariat would like to take this opportunity to make a call for voluntary contributions to support this work. In-kind or financial support (minimum EUR 5 000) would greatly facilitate delivery of the draft project report on time for the next WPBWE meeting (February 2015).

Action required:
• Delegates are requested to provide feedback on this questionnaire, particularly with respect to its policy relevance
• Delegates are invited to designate a National Focal Point (NFP) to whom the questionnaire should be directed
• Delegates are invited to express their willingness to make a voluntary contribution for this project

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English - Or. English

HUMAN IMPACTS ON THE NITROGEN CYCLE: POLICY QUESTIONNAIRE

At its meeting 7-8 November 2013, the Working Party on Biodiversity, Water and Ecosystems (WPBWE) agreed to a proposal from the Secretariat to carry out a study of the human impacts of the nitrogen cycle. At the meeting, the Secretariat presented a scoping paper of the nitrogen project (ENV/EPOC/WPBWE(2013)10) and Delegates agreed it would be useful to inform the analysis through a policy questionnaire. The questionnaire will be sent to all OECD and BRIICS countries.

The focus of this questionnaire is nitrogen in all its reactive forms, i.e. nitrogen oxides, nitrates, ammonia, nitrous oxide, as well as secondary (inorganic) particulates formed from a combination of nitrogen compounds in air.

Given the local nature of many nitrogen impacts, the focus is not only on policies designed at the central/federal level. We would be very grateful for any information that could be provided regarding policies at the local/sub-federal levels as well. This information can be provided under "additional comments" in the relevant parts of the questionnaire.

Given the wide range of environmental issues covered by the questionnaire (see Annex I), we would be very grateful if you could provide information regarding targets and policies to address the human impacts on the nitrogen cycle for each of these environmental issues. This can be done by filling in several copies of the questionnaire.

In connection with most of the questions, there is a line for "additional comments". You are most welcome to supply as much information as you believe could be useful there.

References related to the various questions could be usefully included, even if in a language other than English or French. This would allow setting up an information base for the different items of relevance to reactive nitrogen.

The responses to the questionnaire will help inform and illustrate the study of policies to address the human impacts of the nitrogen cycle. The intention is to present the information collected and a literature review in a draft report to the WPBWE meeting to be held on 18-20 February 2015.

You are requested to respond electronically to this questionnaire by **29 August 2014**, sending the reply to Gerard.Bonnis@oecd.org .

1. GENERAL INFORMATION

- Country:……
- Name of the contact person: ……
- Affiliation of the contact person: ……
- Email address of the contact person: ……..
- Web-pages where relevant information can be found: ……...
- Additional information……

2. AIM AND SCOPE OF THE QUESTIONNAIRE

The overarching objective of integrated nitrogen management is to manage the amount of atmospheric nitrogen (N_2) converted into reactive (potentially harmful) forms. The goal is to prevent unwanted release of reactive nitrogen into ecosystems.

The aim of the OECD nitrogen project is to promote effective and efficient nitrogen policies to meet this objective. In that context, the aim of this questionnaire is to help the Secretariat carry out a survey of country strategies (plans and programmes) and policies to manage Reactive Nitrogen (Nr) in the relevant parts of their environment and economy. The survey will also explore country initiatives toward adopting a holistic and joined-up approach to Nr management.

The scope of the survey includes all key sectoral sources of Nr emissions (agriculture, energy combustion, industrial processes) and all key environmental issues (air, climate, water, nature, soil, waste) (see Annex I). Nr includes nitrogen oxides (NOx), ammonia (NH3), nitrous oxide (N2O), as well as ammonium (NH_4^+) and nitrate (NO_3^-) which can be combined as ammonium nitrate (NH_4NO_3) in fine particulates (PM) or in water.

3. NITROGEN RISKS

1. For the most recent years for which data are available, please provide a quick overview of the main sources of Nr in your country (e.g. by filling the Table below). The intent is not to compare data among countries, for which an economy-wide nitrogen indicator is being developed under the Working Party on Environmental Information (WPEI). The aim is to get a holistic view of Nr emissions by using readily available data in your country while avoiding double counting (given Nr flows between air, land and water). Transboundary imports and exports should not be included in the Table but indicated separately. Please note that the different items in the Table could be reported as N (e.g. NO_x-N, NH_3-N, N_2O-N) to facilitate aggregation.

Country/region for which data is reported: _____

Year for which data is reported: _____

Nr emissions (Gg N/year)	AIR			WATER	
	NO_x	NH_3	N_2O	NO_3^-/NH_4^+	Total
Agriculture, incl. livestock					
Transport					
Industry/Energy					
Wastewater/Run-off					
Total					

2. Please indicate to which extent Nr risks to health and the environment in your country have been translated into costs to society.

3. Additional comments (e.g. reference to assessments of the cost of inaction).

4. NITROGEN TARGETS

4. Please indicate whether your country has set quantitative Nr emission, deposition and concentration targets, and if so, for which environmental issue, in which geographical area and what form of Nr is covered (e.g. by filling the Table below).

Country/region for which data is reported: _____

Year for which data is reported: _____

Target name	Geographical scope	Nr form covered	Environmental issue	Timeframe for implementation	Target	Distance to target	Name of supporting legislation

5. As appropriate, please indicate on which basis (bases) have such targets being set:

- to meet international commitments (e.g. climate change, transboundary water quality, transboundary air pollution)
- to meet national objectives (e.g. health standards, water quality, air quality)
- as part of a multi-pollutant broader target (e.g. reducing nitrogen and phosphorus)

6. For each target, please indicate:

- if cost-benefit analysis (CBA) was undertaken and if it influenced the level of ambition in reducing Nr emission
- if risk-risk trade-offs were assessed:
  - between lowering Nr emissions and food security
  - between upstream/upwind and downstream/downwind Nr emissions (pollution swapping)

7. To your knowledge, how do your targets compare with those of other OECD and BRIICS countries (e.g. more stringent)?

8. Please reference other information that is available elsewhere (e.g. Long-Range Transboundary Air Pollution –LRTAP targets and others).

9. Additional comments (e.g. reference to cost-benefit analyses of targets)

5. POLICIES TO ADDRESS THE HUMAN IMPACTS ON THE NITROGEN CYCLE

The intent of this section is to get a sense of which instruments of the policy mix – among direct regulatory instruments, market-based instruments, public financial support and information measures -- have been given more attention in your efforts to meet targets. There is no need to go into detailed description of all policy measures, as this would require too much of your time. For policies of particular interest to your country, though, it would be useful to get into more detail.

10. For each nitrogen target listed above, please provide information on:

a) existing and planned strategies (plans and programmes) to address the health and environmental issues

- As appropriate, please indicate any (ex-ante or ex-post) assessment of such plans and programmes (in terms of both efficiency and effectiveness)

b) existing and planned policy instruments to manage Nr and achieve the target:

- direct regulatory instruments (e.g. standards, limits, bans, Best Available Technology (BAT) requirements)
- market-based instruments
  - taxes and charges (e.g. on Nr emissions, on Nr inputs)
  - tradable permit systems (e.g. cap-and-trade system for emissions, ecosystem service trading, nutrient offsetting)
  - payments for ecosystem services between potential beneficiaries and providers
- public financial support (e.g. to encourage innovation, to finance infrastructure, to enhance otherwise unremunerated ecosystem services)
- information measures
- As appropriate, please indicate any (ex-ante or ex-post) assessment of such policy measures (in terms of both efficiency and effectiveness)

11. Please provide the legal and institutional frameworks for such plans, programmes and policies

- As appropriate, please indicate if national legislation transposes transnational legislation (e.g. EU Directives)

12. Please indicate steps taken to ensure coherence between strategies and policies to address the human impacts on the nitrogen cycle and other (sectoral, environmental) strategies and policies (e.g. to take account of spillover effects of sectoral and environmental policies on nitrogen management)

13. Please indicate whether your country has adopted/planned an ecosystem approach to Nr management (e.g. by promoting environmental quality objectives and ecosystem services to manage nitrogen)

14. Please indicate whether your country has adopted/planned a circular economy/resource efficiency approach to Nr management (e.g. by recycling instead of removing nitrogen from waste water)

15. Please indicate whether your country has adopted/planned a spatial approach to Nr management (e.g. catchment management)

16. Please indicate any new development to manage Nr risks and achieve Nr targets

- if appropriate, please indicate the status of the new policy (e.g. when it is expected to be implemented)

17. Please reference any recent reporting of policies to address the human impacts on the nitrogen cycle (e.g. as part of your reporting obligations under international commitments)

18. Additional comments (e.g. reference to cost-effectiveness analyses of policy measures)

6. TOWARD MORE INTEGRATED APPROACHES TO NITROGEN MANAGEMENT

Quoting the USEPA SAB assessment (2011): "countries have been active in the management of Nr: in wastewater; to decrease photochemical smog and acid rain; to control eutrophication of lakes and coastal systems; to control fine particulates in the atmosphere; and, to decrease leaching and runoff from farm production. As beneficial as those efforts have been, they have focused on the specific problem without consideration of the interaction of a particular system with other systems downstream or downwind. Given the reality of the nitrogen cascade, this approach may result in short-term benefits for a particular system but may only temporarily delay larger-scale impacts on other systems. Thus there is a need to integrate N management programmes, to ensure that efforts to lessen the problems caused by N in one area of the environment do not result in unintended problems in other areas."[1]

Quoting the European Nitrogen Assessment (2011): "the most attractive mitigation options are those that offer simultaneous reductions of all N pollutants from all emitting sectors and in all ENV compartments."[2]

Following on these assessments, integrated/holistic Nr management should aim at reducing the amount of Nr entering the cycle. This could be achieved by setting economy-wide national emission ceilings (NEC), which would imply risk-risk trade-offs between strategic policy objectives, such as between food security and environmental protection.

Improving economy-wide nitrogen efficiency (NUE) could also deliver multiple economic, environmental and food security benefits, though it would not guarantee a net reduction in the amount of Nr entering the cycle.

Integrated nitrogen management could be thought of in these terms:

a) a country makes an assessment of the overall amount of reactive nitrogen it is introducing into the environment from all sources

b) it then develops strategies and policies addressed to the different sources of reactive nitrogen (on the basis of the most cost effective means) to reduce them

c) it monitors these sources so that it can report – both by source and globally – the amount of reactive nitrogen that is being released.

19. Please indicate whether your country has developed/planned such economy-wide approach to Nr management.

- As appropriate, what have been the main obstacles to design and implementation

20. Please indicate whether your country has developed/planned other types of integrated/holistic approaches to Nr management.

[1] USEPA (2011), Reactive Nitrogen in the United States: An Analysis of Inputs, Flows, Consequences, and Management Options – A Report of the EPA Science Advisory Board, EPA-SAB-11-013/August 2011/www.epa.gov/sab, Science Advisory Board, Office of the Administrator, USEPA, Washington D.C.

[2] Sutton et al (2011), The European Nitrogen Assessment, Sources, Effects and Policy Perspectives, Cambridge University Press, United Kingdom.

- As appropriate, what have been the main obstacles to design and implementation

21. Please indicate your country anticipations in terms of the human impacts on the nitrogen cycle (including the main drivers) and how to respond to it

22. Please indicate good examples of integrated/holistic approaches to Nr management for which case studies could be undertaken by the OECD Secretariat.

23. Additional comments (e.g. reference to national nitrogen assessment)

ANNEX I. SCOPE OF THE QUESTIONNAIRE

Environmental issues

Air quality

Climate change

Water quality

Nature conservation (terrestrial and aquatic ecosystems)

Soil quality

Waste management (waste water, solid waste incl. food waste)

Sectoral policies

Agriculture

Fuel combustion from:

- energy production (e.g. power plants)
- industry
- transport
- Other (e.g. residential)

Industrial process emissions