



# Responsibilities, procedures and regulations for GHG inventory development in Germany

Background Information for Transport Authorities  
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## Project Context

The Advancing Transport Climate Strategies (TraCS) project is implemented by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) and funded through the International Climate Initiative of the German Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB).

Its objective is to enable policy makers in partner countries (Vietnam and Kenya) to specify the contribution of the transport sector to their respective Nationally Determined Contributions (NDCs). Detailed knowledge on transport-related emissions and mitigation potentials can furthermore lead to raising the level of ambition in the two countries.

### **The project follows a multi-level approach:**

At the country level, TraCS supports (transport) ministries and other relevant authorities in systematically assessing GHG emissions in the transport sector and calculating emission reduction potentials through the development of scenarios.

At the international level, TraCS organises exchanges between implementing partners, technical experts, and donor organisations to enhance methodological coherence in emission quantification in the transport sector (South-South and South-North dialogue). The dialogue aims to increase international transparency regarding emissions mitigation potential and the harmonisation of methodological approaches in the transport sector. As part of this international dialogue, TraCS also develops knowledge products on emissions accounting methodologies.

## Background on the Paper

This document aims at providing an overview on the German framework for Greenhouse Gas Emission inventory creation, with a focus on institutional arrangements and procedures. It also gives insight on the modelling approach and on the organization of data provision in the transport sector. It was inquired by our Vietnamese partners during a study trip to Germany in October 2016, but the topic could be of potential interest for other partners and be used for outreach and training purposes.

## Abbreviations

<b>AGEB</b>	Working Group on Energy Balances
<b>BMEL</b>	Federal Ministry of Food and Agriculture
<b>BMF</b>	Federal Ministry of Finance
<b>BMI</b>	Federal Ministry of the Interior
<b>BMUB</b>	Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety
<b>BMVBS</b>	Federal Ministry of Transport, Building and Urban Affairs
<b>BMVg</b>	Federal Ministry of Defense
<b>BMWi</b>	Federal Ministry for Economic Affairs and Energy
<b>BUR</b>	Biennial Update Report
<b>CSE</b>	Central System on Emissions
<b>DEHSt</b>	German Emissions Trading Authority
<b>DESTATIS</b>	Federal Statistic Office
<b>DLR</b>	German Aerospace Center, Institute of Transport Research
<b>EU EST</b>	Emissions trading system (of the European Union)
<b>GHG</b>	Greenhouse Gas(es)
<b>GIZ</b>	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH
<b>HBEFA</b>	Handbook Emission Factors for Road Transport
<b>IFEU</b>	Institute for Energy and Environmental Research Heidelberg
<b>IPCC</b>	Intergovernmental Panel on Climate Change
<b>KiD</b>	Motor Traffic in Germany
<b>MiD</b>	Mobility in Germany
<b>MOP</b>	German Mobility Panel
<b>QA</b>	Quality Assurance
<b>QC</b>	Quality Control
<b>QSE</b>	Quality System for Emissions
<b>SNE</b>	Single National Entity
<b>TREMOT</b>	Transport Emission Model
<b>UBA</b>	Federal Environment Agency (Umweltbundesamt)
<b>UNFCCC</b>	United Nations Framework Convention on Climate Change

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# 1. International and European Framework for German GHG inventory

The Revised UNFCCC Reporting Guidelines and the Kyoto Protocol demand the determination of institutional arrangements for GHG emission reporting of Annex I parties to the UNFCCC. Hence, Germany, classified as Annex I country and Kyoto party, has specific reporting and review requirements for its GHG inventory. Annex I states e.g. are required to establish a national system for preparation of GHG inventories, taking into account the UNFCCC Guidelines for national systems (Decision 19/CMP.1).

Currently, the Paris Agreement's "rule book" is being established, that will provide operational guidance for fulfilling the ambition of the Paris Agreement (2015) and providing clarity on countries' efforts to reach the global goal. However, it can be assumed that the methodological approaches will not change substantially. These rules are critically important in order to promote robust, ambitious and effective action on the ground in countries. It still remains unclear so what extent developing countries in the future will have to meet the same reporting requirements as industrialised countries.

The German national system has been adapted to international requirements by the UNFCCC and the second commitment period of the Kyoto Protocol in a process lasting from 2007 to 2014 ([UBA 2016b, p.76](#)).

Besides the international framework set by the UNFCCC, the National GHG inventory system for Germany also has to meet the requirements of the European Regulation on a mechanism for monitoring and reporting GHG in the European Union and its Member States ([EU 2013; Regulation 525/2013](#)).

The German System meets the principles of transparency, consistency, comparability, completeness and accuracy through use of the methodological assistance from the 2006 IPCC Guidelines for National GHG Inventories ([IPCC 2015](#)), through ongoing quality management and through continuous inventory improvement.

Table 1: Relevant international/ EU decisions and documents impacting German GHG inventory system

Document	Content
<a href="#">Kyoto Protocol</a> (text adopted in 1997; entered into force on 16 February 2005) Paragraph 5.1.	Sets mandatory targets on GHG emissions for the developed countries (Annex I) 1st commitment period: 2008 to 2012 2nd commitment period: 2013-2020  Defines for Annex I countries that they shall have a national system for the estimation of anthropogenic emissions by sources and removals by sinks of all GHG not controlled by the Montreal Protocol in place, no later than one year prior to the start of the 1st commitment period,
UNFCCC; <a href="#">Decision 19/CMP.1</a> (as of 2005, published in 2006)	Provides guidelines for reporting of anthropogenic GHG emissions for applicable for Annex I Parties, referring to 2000 IPCC Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories (IPCC; 2000) and to the Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories (IPCC; 1996)
UNFCCC; <a href="#">Decision 24/CP.19</a> (2013)	Update to incorporate 2006 IPCC Guidelines for National Greenhouse Gas Inventories (IPCC; 2006) that have to be used for inventories of Annex I Countries starting from reporting period in 2015. Furthermore it incorporate new gases and requests all Annex I parties to implement national institutional arrangements for the reporting of GHG emissions.
Revised 1996 <a href="#">IPCC Guidelines for National Greenhouse Gas Inventories</a>	Guideline for reporting of GHG under UNFCCC for Annex I countries until its substitution by revised 2006 Guidelines by Decision 24/CP.19 (UNFCCC 2013). It still applies to non-Annex.
<a href="#">2006 IPCC Guidelines for National Greenhouse Gas Inventories</a> (latest version as of 2015)	Used by Annex I Parties for inventories since 2015 any an increasing number of Non-Annex I parties. It consists of 5 Volumes that together provide methodologies for estimating national inventories of anthropogenic GHG emissions and assists Parties in fulfilling their reporting under the UNFCCC. Coverage is complete for all greenhouse gases not covered by the Montreal Protocol.
<a href="#">EU 2013; Regulation 525/2013</a> on a mechanism for monitoring and reporting GHG emissions and for reporting other information at national and Union level relevant to climate change	Established a Union inventory system to ensure the timeliness, transparency, accuracy, consistency, comparability and completeness of national inventories with regard to the Union GHG inventory that is administered and maintained by the European Commission, sets reporting schedule for EU member states. Besides the inventories, duties also include reporting on policies and measures and on projections of anthropogenic GHG emission.

Source: GIZ

## 2. GHG inventory in Germany – Responsibilities, procedures and regulations

The German National System has been institutionalized at three levels: at the ministerial level of the Federal Government; at the subordinate level of federal administration and at a level outside of the federal administrative sector. The National System builds on existing data flows and provides measures to assure continuous data availability.

### National System principles paper

The National System has been established in 2007 on the basis of an agreement between state secretaries of the seven relevant ministries, namely the Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB); Federal Ministry of the Interior (BMI); Federal Ministry of Defense (BMVg); Federal Ministry of Finance (BMF); Federal Ministry for Economic Affairs and Energy (BMWi); Federal Ministry of Transport, Building and Urban Affairs (BMVBS) and Federal Ministry of Food and Agriculture (BMEL). With the inclusion of these ministries, all key institutions and organizations are now involved in preparing emissions inventories that are in a position to provide high-quality specialized contributions. In the so-called “National System principles paper on emissions reporting in Germany” (see Annex I), the state secretaries defined responsibilities pertaining to the various relevant source and sink categories and to the necessary financing for 2008.

### National Co-ordinating Committee

In 2007 by the means of the National System principles paper, the participating ministries established a National Co-ordinating Committee, headed by the Federal Ministry for BMUB and including representatives of all above mentioned federal ministries that participate in emissions reporting. It still continues to be an important component of the National System. It has the tasks of supporting the emissions-reporting process and clarifying open issues concerning the National System. The Committee carries out consultations with regard to data gaps and settles issues with regard to assigned responsibilities. Furthermore, it is responsible for

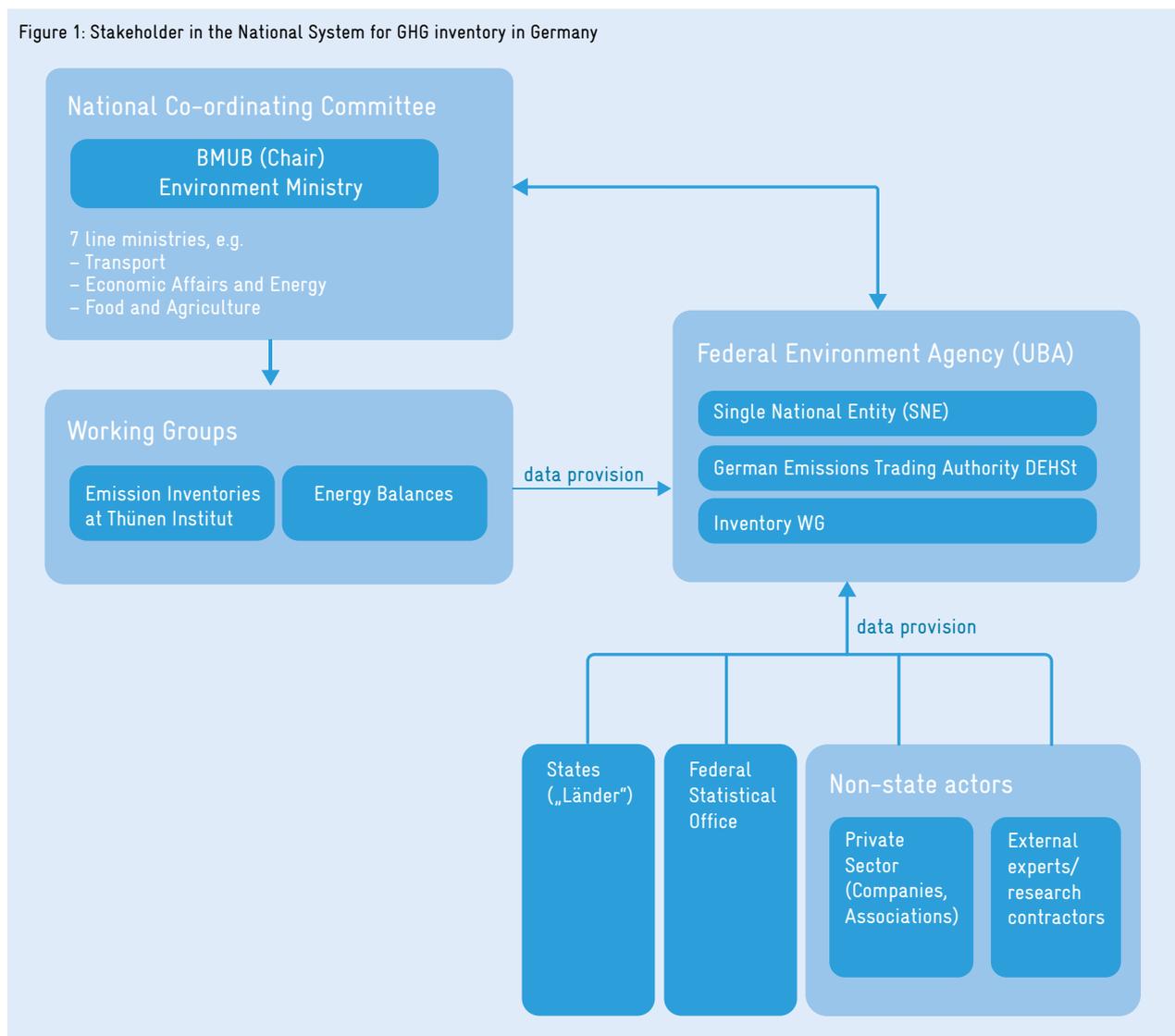
approving inventories and the reports required by the Kyoto Protocol. It meets at least once per year and between meetings, the participating federal ministries carry out co-ordination via digital communication (UBA 2016b, p 78).

### Single National Entity

The Federal Environment Agency (Umweltbundesamt; hereafter referred to as UBA), subordinate agency of the BMUB since 1974, was appointed by the state secretaries as a national co-ordination agency for emissions reporting (Single National Entity; SNE). It integrates other specialized agencies within the National System and coordinates the contributions of the other institutions and organizations involved in emissions reporting. The framework of the National System has a binding schedule for preparation of emissions inventories and is announced to all relevant internal and external stakeholders (See Table 2). For coordination of relevant work within the UBA, a working group on emission inventories was established and various departments within UBA gather data on their topics, i.e. emissions from transport sector, regulated by an in-house directive (Nr. 11/2005). Meetings of the working group are conducted at least once a year, but between meetings relevant members of the working group meet as necessary to discuss specific issues..

UBA's task as the Single National Entity's include planning, preparing, description and archiving of inventories and carrying out quality control and assurance for all major process steps. It serves as a central point of contact and co-ordinates and informs all participants in the National System. Since 2008, its focus has been on improving existing data sources and safeguarding their availability for the long term as well as maintaining the institutionalization of the National System (UBA 2016b, p.78). This included identification and integration of institutions that were necessary to become part of the National system.

Figure 1: Stakeholder in the National System for GHG inventory in Germany



Source: GIZ, based on UBA 2016b

### Tools of the SNE

The UBA in its function and the SNE has developed two key tools for carrying out those tasks. The first is a central database for emissions calculation and reporting, called Central System on Emissions (CSE). It is used for central storage of all information required for emissions calculation (methods, activity data, and emission factors). The CSE is not only an emission information system, it also processes data and serves as reporting tool for preparing emission reports in accordance with the international (UNFCCC) and national reporting requirements. It is the main instrument for documentation and quality assurance at the data level and is continuously maintained and updated.

The second is the Quality System for Emissions (QSE) that provides the necessary framework for good inventory practice and for routine quality assurance, including definition of responsibilities and quality objectives for all work carried out in the inventory process. QC procedures have been developed with the help of external experts, taking into account the Federal Environment Agency's work structures, general guidelines for QA and the IPCC Good Practice Guidance.

The two major processes of the QSE are the assessments and control of the quality by source specific checklists and the ex-post inventory improvement due to the elaboration of an inventory improvement plan.

### Data provision and handling of data gaps

Mainly two conditions for data collection exist that require different types of formal regulations or agreements to ensure data provision.

- 1) Data is directly available from public sources/statistics (e.g. on federal or state level through statistic offices etc.). This is the main data source for the inventory.
- 2) Data be made available from non-state actors, e.g. from the private sector to supplement the official statistics.

There is no official law regulating the GHG inventory system and data provision. Data delivery can be organized either through official cooperation agreements or where not possible through voluntary commitments (sample agreement in German can be found in Annex II). These agreements are fundamental for a successful inventory process. Where voluntary commitments expire, discussi-

ons have to be carried out with the relevant data suppliers in order to secure the commitments' renewal or their conversion into cooperation agreements. Where continued data provision is not assured, relevant commitments or cooperation agreements have to be obtained. In an early stage of cooperation with the private sector, cooperation was handled with voluntary commitments, which are successively replaced by formal cooperation agreements that establish details on the cooperation, data provision, QA/QA and contact information. Currently, agreements with five business associations and tree enterprises are in place.

#### **Cooperation of state authorities for GHG emission reporting**

All federal authorities are obligated to cooperate to fulfil legal tasks on a national level as e.g. emission reporting due to German government's rules of procedure <sup>1</sup> (Chapter 5; on Cooperation). The National System Principles Paper (see Annex I) on Emissions Reporting defines the responsibilities of the various participating federal ministries. It sets forth that involved federal ministries are to undertake suitable activities to close data gaps that fall within their areas of responsibility. Where data flows are incomplete, responsible ministries are obliged to close existing data gaps, e.g. through the provision of pertinent data. In some cases, required data may be provided by reliable third parties.

For some of the data streams from other federal institutions, special agreements have been concluded between the relevant institutions.

One example is an administrative cooperation agreement between the UBA and the Federal Statistical Office (Destatis) that came into force in 2010. It is mainly to enable the provision of confidential data and specifies data deliveries for emissions-reporting purposes (GHG inventory cycle during the year see Table 2). It institutionalized the process of close direct exchanges between the UBA as the Single National Entity and Destatis and transfers responsibility for statistical confidentiality to the UBA.

#### **Agreements with non-state actors**

There are several case specific co-operation agreements with economic associations, companies and other independent organizations. In 2008, a sample agreement was prepared for inclusion of non-governmental agencies within the National System. This agreement is used to involve stakeholders (e.g. from the industry) in the preparation of inventories under binding terms. The sample agreement is adapted to the various data suppliers' own requirements and needs as is necessary. These agreements can provide a reliable long-term framework for data provision and improve data quality (e.g. to enable detailed reporting according to TIER 3 methods)<sup>2</sup>. Data is always handed in together with a checklist for quality assurance and control (see Annex III; in German only).

The most important issue in the agreements is how to deal with confidential data. Information on emissions in general is not characterized as confidential data. However, activity data and emission factors may be confidential. Therefore, storage and usage of data requires special procedures to protect confidentiality and assure completeness of inventories. Confidentiality of data, if requested, is also ensured through aggregation and/or restricting number of users able to handle data.

Involvement of the non-state actors is achieved primarily via certain departments of the UBA. The UBA as the SNE supports the departments in discussion of reporting requirements and in determination of requirements for data-sharing by associations. Data flows are continually reviewed by the UBA and, where necessary, are ensured by suitable agreements between the UBA and associations / business enterprises. Data supply in particular in the transport sector is described in the next section.

<sup>1</sup> § 19 Co-operation between the Federal Ministries: "In matters affecting the remits of more than one Federal Ministry, those Ministries will work together to ensure that the Federal Government speaks and acts consistently. Prompt and comprehensive involvement is the responsibility of the lead Federal Ministry."

<sup>2</sup> For detailed explanation of Tier I, II and III approaches for GHG inventory, please consult GIZ's Reference Document on Measurement, Reporting and Verification in the Transport Sector (2016)

Table 2: Binding schedule in the framework of the National System

15 May	The Federal Environment Agency's national co-ordinating agency (Single National Entity) requests responsible experts to submit data and report texts
31 July	Delivery of energy data of the Working Group on Energy Balances (AGEB), of statistical data of the Federal Statistical Office and of data provided under agreements with associations and companies, where such data serve as the basis for further calculations
by 1 September	Deliveries of ready-to-use inventory data from the Federal Environment Agency and from external institutions of the NaSE as of 2 September Validation / discussion of deliveries by responsible experts and quality managers, taking account of review results
by 1 October	Preparation of CRF time series and of national trend tables; final editing by the Single National Entity within the Federal Environment Agency
by 1 October	In-house consultations at the Federal Environment Agency
as of 15 November	Final quality assurance by the QSE/CSE/NIR co-ordinator
25 November	Report of the Single National Entity to the BMUB, for commencement of inter-ministerial co-ordination relative to the CRF data and the National Inventory Report
by 20 December	Approval via departmental co-ordination (initiated by the BMUB)
as of 2 January	Final editing by the Federal Environment Agency's national co-ordinating agency (Single National Entity)
15 January Report	(CRF and certain parts of the NIR) goes to the European Commission (in the framework of the CO2 Monitoring Mechanism) and to the European Environment Agency
15 March Report	(corrected CRF and complete NIR) goes to the European Commission (in the framework of the CO2 Monitoring Mechanism) and to the European Environment Agency
15 April	Report goes to the FCCC Secretariat
May	Initial check by the FCCC Secretariat
June	Synthesis and assessment report I (by the UN FCCC Secretariat)
August	Synthesis and assessment report II (country-specific; by the UN FCCC Secretariat)
September - October	Inventory review by the UN FCCC Secretariat

Source: UBA 2016b, p. 83

### 3. Emission modeling and data management in the transport sector in Germany

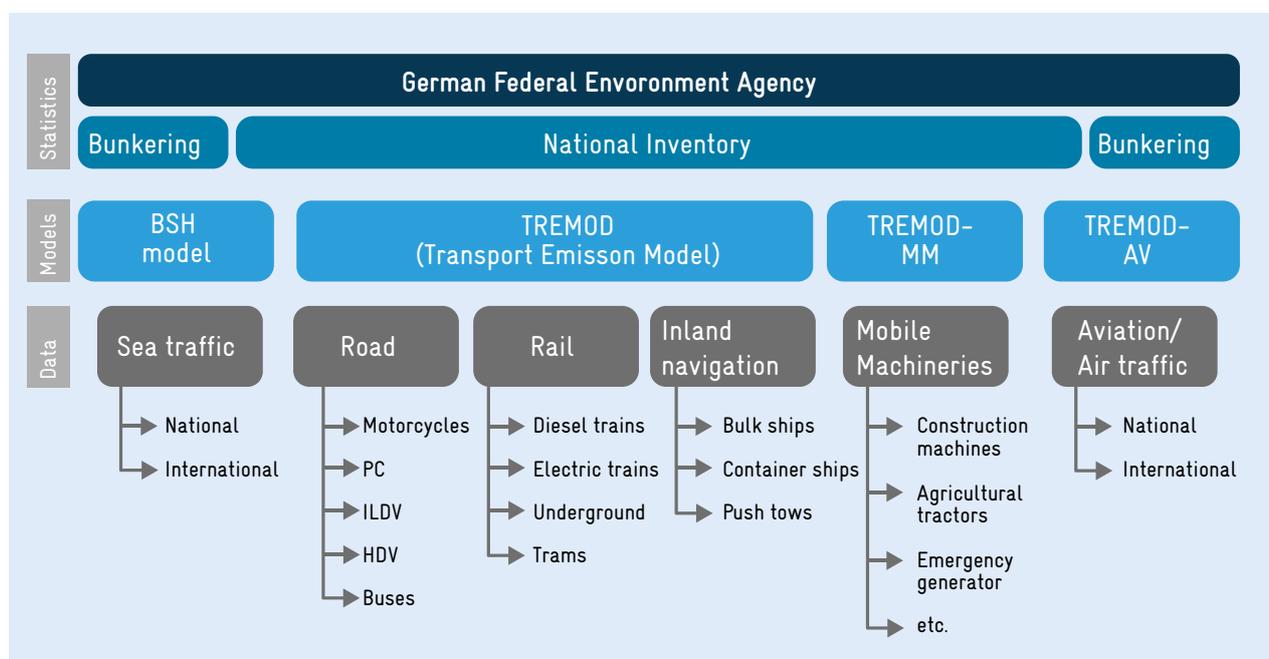
#### The German Emission Model

The CSE serves as a tool carrying out the final calculations of GHG emission factors and activity data. However, calculations are further disaggregated and more detailed (in order to determine the values used in the CSE) are computed with special models. Transport emissions of the motorized transport in Germany are calculated primarily with TREMOD (Transport Emission Model)<sup>3</sup>. TREMOD also is used for data management of bottom-up data and therefore can be furthermore used as a tool for the Measurement,

Reporting and Verification (MRV) of measures<sup>4</sup>. It can also provide a modelling of air pollutants. The co-benefits between GHG and air pollution is an important objective for Germany to invest in detailed modelling tools like TREMOD.

For every year between 1960 and 2012, and in scenarios until 2030, TREMOD analyses all means of passenger transportation (cars, two-wheelers, busses, trains, aircraft) and all means of freight transportation (lorries, light-duty commercial vehicles and trailers, trains, inland navigation vessels, aircraft). TREMOD is developed

Figure 2: Overview of German Transport Emission Models by mode used by the UBA



Source: UBA 2017b

<sup>3</sup> Including TREMOD for Mobile Machinery (TREMOD-MM) and TREMOD for aviation (TREMOD AV). Only Maritime data is processed in a different model (E.M.M.A).

<sup>4</sup> [http://transferproject.org/wp-content/uploads/2017/05/Transport-GHG-Inventory-and-MRV-of-measures\\_Paper\\_Vieweg\\_2017.pdf](http://transferproject.org/wp-content/uploads/2017/05/Transport-GHG-Inventory-and-MRV-of-measures_Paper_Vieweg_2017.pdf)

by the Institute for Energy and Environmental Research Heidelberg (IFEU) on behalf of the UBA since January 1993. Operation of TREMOD and its components is organized regularly via calls for tenders.

Besides by UBA, TREMOD is used by some federal ministries, the Federal Highway Research Institute, the Association of the German Automotive Industry VDA (since 1996) and the Association of the German Petroleum Industry MWV (since 1996), Deutsche Bahn AG (since 1997), Deutsche Lufthansa (since 2006) and TUI (since 2006). These partners conceptually and financially support the enhancement of the model and its continuous updating to state-of-the-art scientific knowledge as well as new legislation and technology (IFEU 2015).

### Methodological approach

In principal, there are two different types of results for the emission calculation that are used in TREMOD:

- Results based on the bottom-up calculation of territorial transport activity
- Results based on the energy balance (i.e. fuel sold)

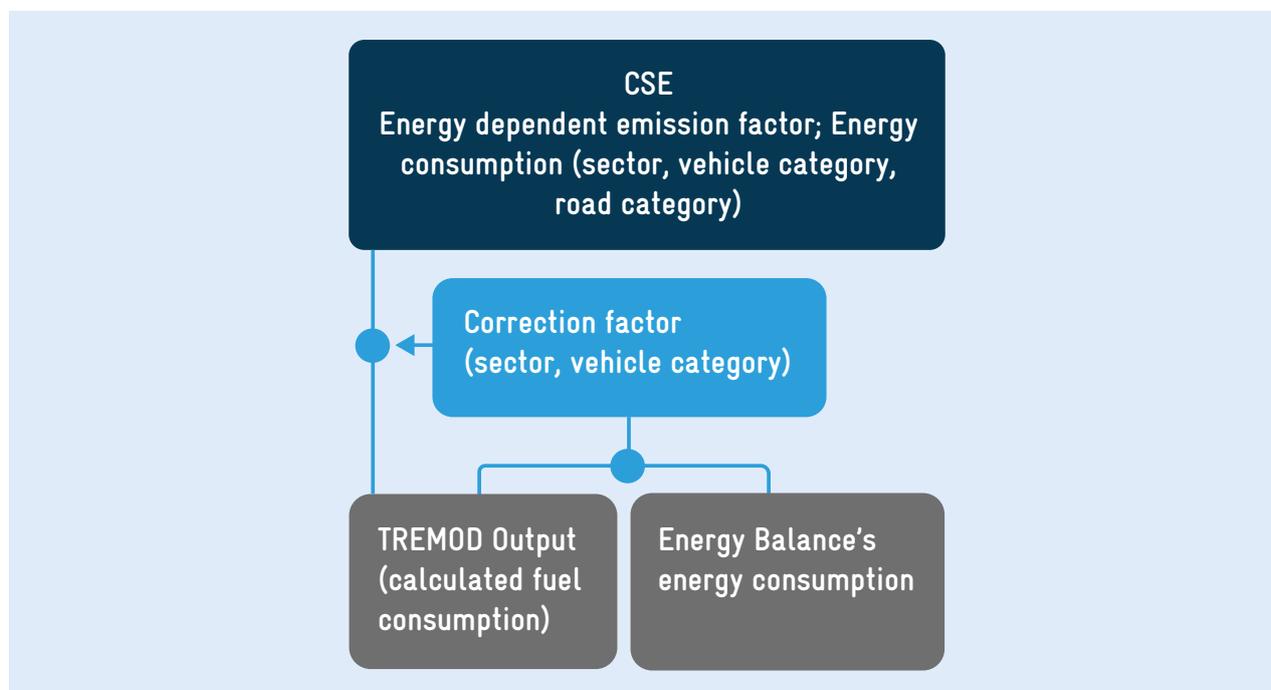
In the bottom-up calculation process the emissions are calculated on the basis of the transport activities within the borders of Germany (“In-country-approach”). According to the QSE (see previous chapter), consistency is one of the quality criteria for the inventory process. For this reason, the GHG emissions in the energy sector

are calculated based on the energy balance. The energy balance value is the basis of a top-down calculation for the emission of each source category<sup>5</sup>. To allocate the emissions to the different source categories, a bottom-up calculation process based on transport demand and specific energy consumption is used. The result of this calculation is corrected by a factor to correspond with the energy balance values.

### Output data and interaction with the CSE

The data are annually updated between TREMOD and the CSE. In principal, the interaction of TREMOD with the CSE is the correction with the energy balance values and an aggregation to the CSE differentiation level. Another step in the transformation is the recalculation of emission factors, as in TREMOD emission factors are mostly related to mileage and in CSE emission factors are related to energy. The main steps of the transformation process are shown in the figure below.

Figure 3 Conversion of TREMOD results into the CSE structure



Source: Ifeu 2013

<sup>5</sup> The energy balances are compiled by a non-governmental institution, the „Working Group on Energy Balances“ (Arbeitsgemeinschaft Energiebilanzen e.V. - AGEb -), founded in 1971. Members of the AGEb are four associations of the energy industry (with two supporting associations) and four research institutes.

The level of detail and the methodology of GHG emission calculation are different for each mode. E.g. for road transport there are detailed calculations based on a differentiated model. However, the emissions of the other modes are generally derived from fixed emission factors per fuel use.

## Example: Road sector

Road transport in TREMOD is divided by vehicle category. In principal, these are 2-wheelers, passenger cars, light commercial vehicles and heavy duty vehicles. For each category the transport performance and the fleet composition are calculated separately.

### Modelling

On the level of the individual vehicle, emissions of GHG per vehicle kilometer travelled are depending on technical characteristics (propulsion type; engine size; emission standard, age) and operational conditions. The operational conditions are mainly described by vehicle speed patterns (in a second per second resolution), clustered with the concept of traffic situations. These individual traffic situations are weighted, providing aggregated traffic situations for specific road and vehicle categories. As the emission factors of the traffic situations are covering the emissions during the use of the vehicle with a warm engine only, there are additional factors representing the emissions of the vehicle use with cold engine and emissions out of the vaporising of fuel. Based on typical use patterns, these values are transformed into emission factors per vehicle kilometre travelled.

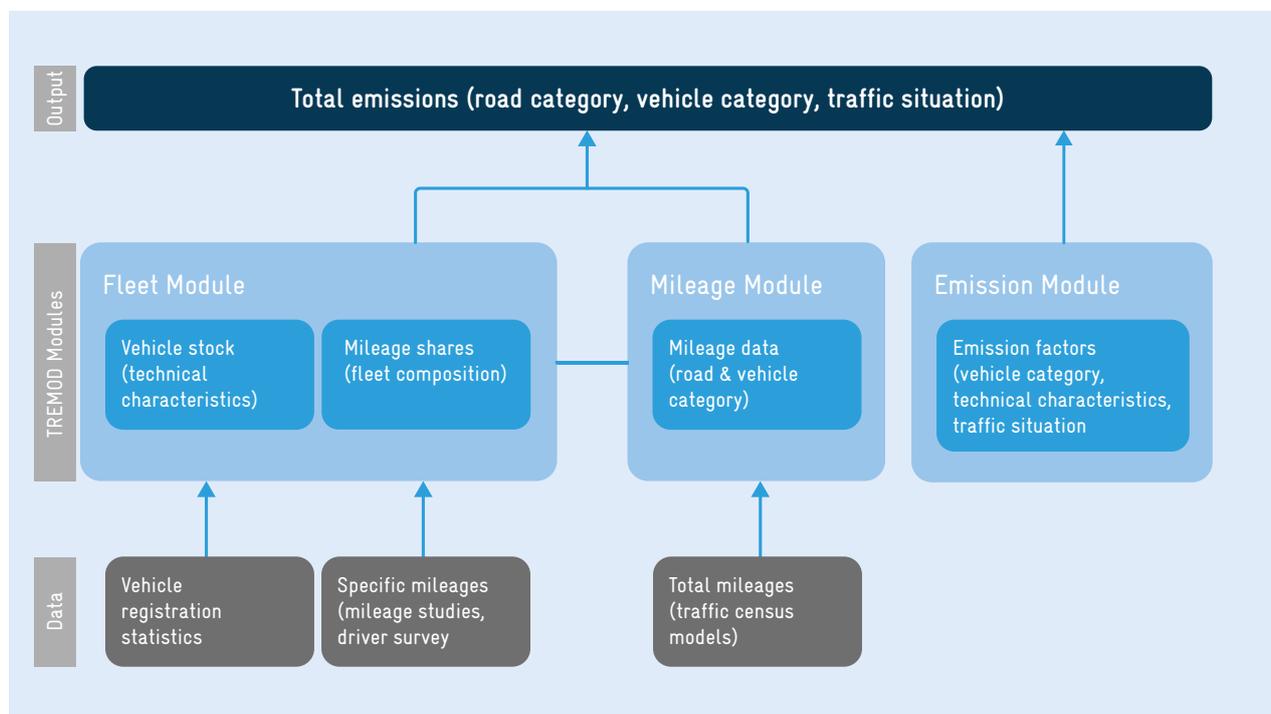
Therefore, the result of this model step provides an emission factor per vehicle-kilometre travelled for each sub segment and age class (representing technical characteristics) and for each road category (representing the typical driving behavior of a vehicle category on a type of road).

The emission factors used in TREMOD are taken from HBEFA (Handbook of Emission Factors for Road Transport. The HBEFA data is based from a number of research programs which are coordinated by the European Research group on Mobile Emission Sources (ERMES).

The next modelling step in TREMOD is the calculation of the emissions of the vehicle fleet on the base of the individual vehicle's emissions. Basic input data for this calculation are the vehicle stock and the vehicle mileage on a highly differentiated level. Finally, the mileage shares and the absolute mileage data are linked with the emission factors of the vehicles to calculate the total emissions of the vehicle fleet.

The following figure shows the basic elements and data sources of the calculation in TREMOD for road transport.

Figure 4: Emission Calculation for road transport in TREMOD.



Source: Ifeu 2013

## Data provision

Extensive basic data from generally accessible statistics (such as of Destatis, energy balances etc.). Special surveys (German Mobility Panel, Mobility in Germany) are used and supplemented. The vehicle stock is based on detailed statistics about vehicle registration, which are available from the Federal Motor Transport Authority (KBA). For the calculation, not the absolute numbers of vehicles are important, but the share of a group of vehicles from the total fleet.

The mileage shares and the mileage data are closely linked and derived from different statistics. Due to the considerable costs associated with mileage examinations in the detail required, only the mileage of important national roads (e.g. motorways) is available annually. To supplement the statistical data, a number of studies are regularly commissioned. At the federal level, the Ministry of Transport commissions three major surveys: the German Mobility Panel (MOP), Mobility in Germany (MiD) and the Motor Traffic in Germany (KiD) (see Table I for more details).

The legal base for data collection is the Federal and State Statistics Acts and specific transport related laws for statistics (Federal Statistics Office Germany). An important element in the setup is the joint agreement on definitions and methods, to ensure compatibility

of different datasets. In this way, the available information can be tailored to serve different objectives, both for transport planning and GHG emissions reporting. Most data is available on an annual basis, some at shorter intervals. It is mostly collected at the individual state level by the respective transport institutions (freight carriers, railway, airports and airlines, public transport providers), and aggregated by Federal Statistical Office (Destatis).

All results from these surveys are publicly available through the Clearing House of Transport Data which is hosted by the German Aerospace Center (DLR). Additionally, data from the German energy balances is collected annually by the German Institute for Economic Research (DiW) in the publication 'Transport in Figures'. For each year, the sum of the activity rates for the various individual structural elements must correspond to the Energy Balance data, in TJ.

The example shows how a complex transport information system can be structured. An important element in the setup is the joint agreement on definitions and methods, to ensure compatibility of different datasets. In this way, the available information can be tailored to serve different objectives, both for transport planning and GHG emissions reporting.

Table 3: Transport activity data input used in TREMOD

Input for TREMOD	Content & parameters	Methodology	Responsible authority and partners
<b>(REGULARY CONDUCTED) STUDIES</b>			
<b>Mobility in Germany (MiD)</b>			
Total VKT (per vehicle category and road category)	Targets household mobility characteristics (per mode), e.g. pkm, number of trip and length and purpose for different trips.	Conducted in 2002, 2008 and 2016  Classical cross-sectional survey, which collects data from a broad selection of households (2008: 25.000 households, 60.000 people) at a given date. random selection, voluntary participation	German Federal Ministry of Transport and Digital Infrastructure (BMVI)
<b>German Mobility Panel (MOP)</b>			
Total VKT (per vehicle category and road category)	Household mobility characteristics, very detailed mobility data (per mode), differentiated information by personal characteristics, such as income, age etc. e.g. pkm, number of trips per person, length of trip; data about mileage with motor vehicles in private households and fuel consumption,	Conducted annually since 1994  Representative household survey, random selection, voluntary participation, based on mobility diary and fueling diary  surveying the same 1.000 households over three years; smaller selection of households than in MID  selects data for a period (one week up to 8 weeks)	German Federal Ministry of Transport and Digital Infrastructure (BMVI) (financing)  Field work by research institute tns infratest; Design and scientific supervision by the Institute for Transport Studies of the Karlsruhe Institute of Technology (KIT)

Input for TREMOD	Content & parameters	Methodology	Responsible authority and partners
<b>(REGULARY CONDUCTED) STUDIES</b>			
<b>„Fahrleistungserhebung“ (mileage survey)</b>			
Total VKT, Average VKT per vehicle (by type, size, fuel, age)	Differentiated indicators on the distance traveled by vehicles of motorized road transport (travel)  Determination of „domestic driving performance“ (Driving performance of German motor vehicles at home and abroad)  Differentiated indicators on the distance traveled by vehicles of motorized road transport (travel)  Determination of „domestic driving performance“ (Driving performance of German motor vehicles at home and abroad)  „Domestic driving“ (driving on German roads, provided by Germans and foreigners)	2002, 2014 (Intervals of several years)  Vehicle owner survey, parallel nationwide traffic census.	Federal Highway Research Institute,  Bundesanstalt für Straßenwesen (BAST)
<b>Traffic Census (automatic and manual traffic counting)</b>			
Total VKT	Data on traffic levels (number of vehicles per unit of time) on the roads for the calculation of annual driving and the average daily traffic volume; data differentiated for nine vehicle types.	Continuously, Automatic counting of all motor vehicles on all federal motorways and on federal roads, all motor vehicles were (at the automatic counting stations by the federal states); 718 automatic counting points on federal motorways and 774 automatic counting points on federal roads  Permanent automatic censuses are supplemented by manual counts every five years.	Federal Highway Research Institute  Bundesanstalt für Straßenwesen BAST) Counting realized by federal states

Source: GIZ

In line with the IPCC Guidelines, each country must develop a GHG inventory system that uses data as efficiently as possible. For this, linkages with the statistical system are necessary so that German instruments such as the CSE or TREMOD cannot be transferred to other countries 1: 1 but would have to be adapted to the local context.

It has to be stressed that institutionalizing capacities for the modeling is a very crucial mean to ensure a continuous and consistent reporting. A model like TREMOD can be externalized to non-governmental institutions (as IFEU), or can be directly developed by state institutions. For this, an institutional framework such as in Germany (principles, rules of procedure etc.) is recommended. For the transport sector, it should involve all institutions with a deep

expertise about an access to relevant transport data. As only a few people work on such data in a country, international knowledge exchange can be very supportive. GIZ and TraCS support such exchanges, especially for people working in the transport sector. Those people trained should work in institutions that are part of the inventory system, to ensure that „brain drain“ does not lead to capacity losses.

# References

- AGEB (AG Energiebilanzen) (2010):** Preface to the energy balances for the Federal Republic of Germany
- GIZ (2016):** Reference Document on Measurement, Reporting and Verification in the Transport Sector. Final Report. Retrieved January 5, 2017, from [http://transport-namas.org/wp-content/uploads/2014/10/Reference-Dokument\\_Transport-MRV\\_final.pdf](http://transport-namas.org/wp-content/uploads/2014/10/Reference-Dokument_Transport-MRV_final.pdf)
- The Federal Ministry of the Interior (n.n.):** Joint Rules of Procedure of the Federal Ministries Retrieved January 30, 2017, [http://www.bmi.bund.de/cae/servlet/contentblob/150474/publicationFile/13399/Moderner\\_Staat\\_-\\_Moderne\\_Id\\_23340\\_de.pdf](http://www.bmi.bund.de/cae/servlet/contentblob/150474/publicationFile/13399/Moderner_Staat_-_Moderne_Id_23340_de.pdf)
- European Parliament and of the Council (2013):** Regulation (EU) no 525/2013 of 21 May 2013. Retrieved January 5, 2017, from <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32013R0525&from=EN>
- Federal Environment Agency (German: Umweltbundesamt; UBA) (2016a):** PPT Presentation, Emission Factors for land-based Transport using HBEFA and TREMOD – admin background. Held by Christiane Vitzthum von Eckstaedt on 27th of October 2016.
- Federal Environment Agency (German: Umweltbundesamt; UBA) (2016b):** Submission under the United Nations Framework Convention on Climate Change and the Kyoto Protocol 2016. National Inventory Report for the German Greenhouse Gas Inventory 1990 – 2014. Retrieved January 6, 2017, from [https://www.umweltbundesamt.de/sites/default/files/medien/378/publikationen/climate\\_change\\_24\\_2016\\_submission\\_under\\_the\\_united\\_nations\\_framework\\_nir\\_2016.pdf](https://www.umweltbundesamt.de/sites/default/files/medien/378/publikationen/climate_change_24_2016_submission_under_the_united_nations_framework_nir_2016.pdf), downloaded on 01/06/2017
- Federal Environment Agency (German: Umweltbundesamt; UBA) (2017a):** How to stabilize data flow: insights in the German institutional arrangements. Presentation of Dirk Günther; on 7th April 2017 in Berlin
- Federal Environment Agency (German: Umweltbundesamt; UBA) (2017b):** Transport GHG Emission Inventories in Germany: General principles and access to data. Presentation of Martin Schmied on 7th April 2017 in Berlin
- Federal Statistics Office Germany. (n.d.).** Rechtsgrundlagen. DESTATIS. Retrieved January 09, 2017, from <https://www.destatis.de/DE/Methoden/Rechtsgrundlagen/Statistikbereiche/TransportVerkehr/TransportVerkehr.html>
- Gesellschaft für Internationale Zusammenarbeit (GIZ):** PPT Presentation: Institutional arrangements of the German GHG inventory system. Held by Oscar Zarzo on the 27th of January 2017.
- IFEU (2013):** GHG Reporting and Inventorying in Germany – Assessing transport related emissions. Retrieved December 16 2016 from [http://www.sutp.org/files/contents/documents/resources/B\\_Technical-Documents/GIZ\\_SUTP\\_TD\\_%20GHG-Reporting-and-Inventorying\\_EN.pdf](http://www.sutp.org/files/contents/documents/resources/B_Technical-Documents/GIZ_SUTP_TD_%20GHG-Reporting-and-Inventorying_EN.pdf)
- IFEU (2015):** TREMOD – Transport Emission Model, Retrieved January 16 2017 from: [https://www.ifeu.de/english/index.php?bereich=ver&seite=projekt\\_tremod](https://www.ifeu.de/english/index.php?bereich=ver&seite=projekt_tremod)
- IPCC (1996):** Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories; volume I-III, Retrieved January 09, 2017 from <http://www.ipcc-nggip.iges.or.jp/public/gl/invs1.html>
- IPCC (2015):** 2006 IPCC Guidelines for National Greenhouse Gas Inventories; corrected as of July 2015. Retrieved December 22, 2016, from [http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2006gls\\_all\\_in.zip](http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2006gls_all_in.zip)
- UNFCCC (2006):** Decision 19/CMP.1, Retrieved January 9, 2017, from <http://unfccc.int/resource/docs/2005/cmp1/eng/08a03.pdf>
- UNFCCC (2013):** Decision 24/CP.19. Retrieved January 9, 2017, from <http://unfccc.int/resource/docs/2013/cop19/eng/10a03.pdf>

# ANNEX I

## National System principles paper on emissions reporting in Germany

Berlin, 5 June 2007

*BMUB, BMI, BMVg, BMF, BMWi, BMVBS, BMEL*

*Source: UBA 2016b, pp. 895*

### “National System” principles paper on emissions reporting

The state secretaries of the ministries concerned have determined as follows, by common consent, with regard to the issue of the “National System” for emissions reporting pursuant to Art. 5(1) Kyoto Protocol:

1. The Federal Environmental Agency, Section I 4.6 “Emissions Situation”, is the responsible “Single national entity” (national co-ordinating agency) for reporting pursuant to the UN Framework Convention on Climate Change and the Kyoto Protocol. A country’s Single National Entity is responsible for preparing the country’s national inventory, working for continual improvement of the inventory, supporting those persons involved in the national system and preparing decisions of the Co-ordinating Committee.
2. A Co-ordinating Committee, representing all affected departments, has been established to deal with all questions arising in the framework of the National System, and to be responsible for official discussion and approval of the inventories and the reports required pursuant to Articles 5, 7 and 8 of the Kyoto Protocol. The Committee shall support all pertinent processes in this framework and, in particular, it shall clarify any pertinent uncertainties – for example, in connection with definition of individual emission factors.  
  
In particular, the Committee shall define key source and sink categories, and the minimum requirements pertaining to quality control and quality assurance for data collection and processing and to the annual quality control and quality assurance plan.  
  
As necessary, the Committee may specify the methods to be used for calculating emissions in the various categories and for calculating storage in sink categories. The Committee is chaired by the BMUB. The Committee shall meet whenever at least one department sees a need for such a meeting. Subordinate authorities and other institutions involved in inventory preparation may be included in meetings as necessary.
3. For preparation of the national inventory, such data shall be used, for calculations of emissions and reductions, as are required pursuant to the provisions of Art. 3 (1) of decision 280/2004/EC and of Art. 2 (1) of the Ground rules for calculating emissions in source categories and storage in sink categories. Inventories shall be prepared on an annual basis. In addition, quality assurance in keeping with the requirements of Art. 12 of the rules shall be carried out. Furthermore, reliable documentation and archiving shall be required.

Existing data-transfer arrangements, such as those made on the basis of voluntary agreements or legal provisions, should not be fundamentally changed; they should only be completed and improved as necessary in order to provide a reliable database. For this reason, the aforementioned responsibilities do not necessarily include data collection and forwarding. With regard to division of responsibilities between BMU/UBA, BMVBS and BMWi, attention is called especially to Annex 1.

The responsibilities for ensuring proper data delivery to the Single National Entity, and for quality control, documentation and data archiving, shall be distributed as follows among the various relevant departments:

- a) For category 1 (Energy) – with the exception of categories 1.A.3 (Transport) und 1.A.5a (Energy: other), where emissions sources of the German Federal Armed Forces (Bundeswehr) are concerned – the Federal Ministry for Economic Affairs and Energy (BMWi) has responsibility.
- b) For categories 2 (Production processes) and 3 (Use of solvents and other products), the Federal Ministry for Economic Affairs and Energy (BMWi) has responsibility.
- c) For category 1.A.3 (Transport), the Federal Ministry of Transport, Building and Urban Affairs (BMVBS) has responsibility.
- d) For category 1.A.5a (Energy: other), where emissions sources of the German Federal Armed Forces (Bundeswehr) are concerned – the Federal Ministry of Defence (BMVg) has responsibility. Where data are subject to secrecy provisions, the Federal Environment Agency shall take the relevant secrecy requirements into account.
- e) For source and sink categories 4 (Agriculture) and 5 (Land use, land-use changes and forestry), the Federal Ministry of Food, Agriculture and Consumer Protection (BMELV) has responsibility.
- f) For category 6 (Waste) and category 7, and well as for issues related to greenhouse-gas emissions from biomass combustion, the Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) has responsibility.
- g) The Federal Ministry of Food and Agriculture (BMEL) is also responsible for preparing tables in the standardised reporting format pursuant to Art. 2 (2) letter a of Decision 2005/166/EC (implementation rules) in source and sink categories 4 and 5.

In addition, the relevant authorities, as determined by the pertinent statistics regulations, are responsible for tasks relative to official statistics, including data delivery, quality assurance and data documentation and archiving. Co-operation between a) the statistical offices of the Federal Government and the Länder and b) the agencies concerned with reporting is co-ordinated via the Federal Statistical Office. In the process, secrecy requirements pertaining to statistics are to be observed.

4. The responsible departments shall clarify, in the short term, how proper data provision is to be permanently assured, to the extent such clarification has not already been completed. In particular, this requirement shall apply to agreements, ordinances or laws needed for institutionalisation of the National System. In general, for purposes of emissions reporting, voluntary agreements with associations and/or individual companies shall have the same status as pertinent legal provisions. In addition, as agreed in the co-ordination discussion on 12 September 2006, the Federal Environment Agency and the Federal Statistical Office shall determine what data can be provided, for reporting purposes, from the official statistical system, as well as what additional data should be collected via the official statistical system. The various relevant departments, the Federal Environment Agency and the Federal Statistical Office shall send their pertinent proposals to the BMU by 15 July 2007.
5. By 31 July 2007, the BMU shall invite participating departments to co-ordinate pertinent proposals and to establish a schedule for implementing the required instruments. The responsible departments, and the Federal Government, shall arrange for the establishment of the required instruments as quickly as possible.
6. Where additional funding is required for execution of the responsibilities mentioned under 3., such funding shall be provided from proceeds from sale of AAUs, via an expansion of the state secretaries' agreement of 22 December 2006 relative to Article 3.4 of the Kyoto Protocol.

To this end, a budget item for relevant income shall be established within Individual Plan 16 (Einzelplan 16) as of the 2008 fiscal year. Following review by the Federal Ministry of Finance (BMF), the additional requirements requiring financing shall be listed as expenditures within the departments' individual budgets. The departments' additional requirements in this regard must be submitted to the BMF by 6 June 2007.

Should additional budget funding be required in coming years, in addition to the additional requirements determined in connection with the 2008 budget, then suitable relevant amounts of additional AAUs shall be sold in subsequent years.  
[...]

#### **Division of responsibilities between BMU/UBA, BMVBS and BMWI**

The BMUB, BMVBS and BMWi have agreed that the existing emissions-reporting structures are to be retained and that the Federal Environment Agency (UBA) shall continue to perform its existing tasks with regard to the categories 1, 1.A.3, 2 and 3. The BMVBS and the BMWi shall ensure that any gaps in the data for those categories for which they are responsible are closed.

#### **Specifically: BMWi**

With regard to category 1: The inventories in this area shall be prepared by the Federal Environment Agency, on a basis that shall include energy data provided by the agency contracted by the BMWi for preparation of energy balances, as well as on the basis of additional relevant statistics and association information.

With regard to category 2: The inventories in this area shall be produced by the Federal Environment Agency on the basis of data that shall include data from statistics of the manufacturing sector (Produzierendes Gewerbe – ProdGewStatG) and from communications of relevant associations / individual companies.

With regard to category 3: The inventories in this area shall be produced by the Federal Environment Agency on the basis of data that shall include data from statistics of the manufacturing sector (Produzierendes Gewerbe – ProdGewStatG), from foreign trade statistics and from communications of relevant associations / individual companies.

Existing requirements for further optimisation shall be clarified, in the short term, by BMWi, BMU and UBA, working in co-ordination. Where data optimisation is required via changes in existing surveys based on the Environmental Statistics Act (UStatG) or on the 13th Ordinance on the Execution of the Federal Immission Control Act (13. BimSchV), the BMU shall be responsible. The Federal Environment Agency shall assume responsibility for recording and archiving data received by the Federal Environment Agency.

#### **BMVBS**

Emissions relative to category 1.A.3 (Transport) shall be calculated by the Federal Environment Agency, using the TREMOD model. The BMVBS shall provide data/calculations as needed to close data gaps and determine emissions relative to international air transports or shall ensure that such data/calculations are provided by third parties. At present, emissions from ship transports may be calculated from Energy Balance data, using default emission factors. The Federal Environment Agency shall assume responsibility for recording and archiving data received by the Federal Environment Agency.

# ANNEX II

## draft sample data-sharing agreement (as of October 17, 2007)

### Cooperation Agreement

Between

Federal Republic of Germany  
represented by the Federal Ministry of [e.g. Economy and Technology] and by the Federal Ministry for the Environment, Nature  
Conservation and Reactor Safety  
[address]  
and represented by the Federal Environmental Agency [address]

and

the <institution>  
[address]

Hereafter referred to as “<institution>”

following cooperation agreement for the collaboration and exchange of data for the national report of emission is concluded

#### Preamble

1. The Federal Republic of Germany is bound by the United Nations Framework Convention on Climate Change, the Kyoto Protocol and the decisions adopted in this framework, as well as at European level by Decision 280/2004 / EC to establish a national greenhouse gas inventory [hereafter referred to as ‚national inventory‘]. The national inventory must be updated annually and sent to both the European Commission and the secretariat set up under Article 8 of the Framework Convention on Climate Change. The national inventory is prepared by the Single National Entity of the National System for Emission Inventories at the Federal Environment Agency [hereafter: ‚Single National Entity‘].

2. *[The Federal Republic of Germany is further bound by the 1979 United Nations Convention on Long-Range Transboundary Air Pollution (LRTAP Convention) and the protocols thereto, and at European level by Directive 2001/81 / EC (hereafter „NEC“-Directive) of 23.10.2001 on national emission limits establishing a national inventory of air pollutants [national inventory on air pollutants within the meaning of the Geneva Air Pollution Convention and the NEC Directive].*

*In this case, the following rules must also be supplemented by the additions in italic and square brackets: § 1 section 1; § 3 section 1 sentence 1; § 5 section 2, § 7 section 1, § 8 section 2; Otherwise, the additions are to be deleted before the conclusion of the agreement.*

3. Reporting under the Kyoto Protocol, decisions made under it and also Decision 280/2004 / EC is organized in the National Emission Inventory System. The coordination, management and archiving of the data and documents as well as the preparation of the national inventory including the inventory report is carried out by the Federal Environmental Agency as the Single National Entity.

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<sup>6</sup> Enter here the relevant department after the state secretary's decision of 5 June 2007 [if applicable insert a more precise name with a number or similar].

4. Various data are required to create national inventories. These are not only numbers to be reported, such as activity data and emission factors, but also information about these numbers, such as, for example information on calculation methods, uncertainties, recalculations, measures of quality control and assurance, times and frequencies of transmission and archiving.
5. No duty to provide information to the <institution> [or its members] on the basis of a law. Is intended by the parties entering into this Agreement
6. The <institution> is [placeholder for a more detailed description of the institution]
7. After concluding this agreement, the <institution> will be referred to third parties as the „official partner of the Single National Entity for emissions reporting of the Federal Republic of Germany, represented by the Federal Environment Agency“ (in short: the official partner of the Single National Entity).

## § 1

### Definitions

1. For the purposes of this agreement, data is the information listed in the annex, whether in the form of numbers or verbalized information used to explain the numbers.
2. In accordance with the definitions in § 3 section 4 of the Federal Data Protection Act, “processing” within the meaning of this agreement is the storage, modification, transmission, blocking and deletion of data. Specifically, regardless of the methods used:
  - a. Storage: Recording, collecting or holding data on a data carrier for the purpose of its further processing or use
  - b. Modification: Changing the content of stored data,
  - c. Transmission: Disclosure of stored or computer-generated data to a third party in such a way that
    - (1) the data will be passed on to the third party or
    - (2) the third party sees or retrieves data held available for inspection or retrieval,
  - d. Blocking: Tagging of stored data to limit its further processing or use
  - e. Deletion: Redaction of stored personal data.
3. In accordance with the definitions in § 3 (5) of the Federal Data Protection Act, utilisation within the meaning of this agreement is any use of data, as far as it is not about processing.

## § 2

### Data transmission

1. The <institution> annually submits to the Single National Entity, free of charge, the data listed in the annex for the previous year until [date].
2. The <institution> submits to the Single National Entity the data to be provided in accordance with Paragraph 1 [of this section] in an appropriate manner, in accordance with the guidelines referred to in § 5 (3) sentence 4 of this Single National Entity Agreement.
3. The <institution> commits to work toward the conclusion of agreements concerning the delivery of data between the <institution> and its members, insofar as the data to be provided pursuant to section 1 cannot be provided by the <institution>. The agreements of the <institution> with its members pursuant to sentence 1 should be concluded as far as possible with the same content as this agreement.<sup>7</sup>

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<sup>7</sup> This section is only to be included if the institution is a federation whose members provide the required data.

## **Cooperation**

1. The parties commit to cooperation, in particular to exchange the information necessary for the preparation of national inventories [and national inventories on air pollutants as defined by the Geneva Air Pollution Convention and the NEC Directive]. [Details regarding the scope, content and organisation of cooperation under this agreement are coordinated by the parties respective to their competence.]
2. The Federal Republic of Germany informs the <Institution> within the framework of an annual meeting of the official partners of the Single National Entity at the invitation of the National Coordination Office.

## **§ 4**

### **Quality control and quality assurance**

1. The <institution> is responsible for quality control of the data to be transmitted under this Agreement.
2. The Federal Republic of Germany is authorised by the Single National Entity to control the data quality and to ensure quality in the preparation of the national inventories and the selection of data sources [as well as in the preparation of national inventories of air pollutants as defined by the Geneva Air Pollution Convention and the NEC Directive].
3. For quality control and assurance, the international obligations, in particular those of the IPCC Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories and the Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories are to be considered as a quality standard. In doing so, the <institution> and the Single National Entity shall apply the provisions of the Coordinating Committee in accordance with the State Secretary Decision of 5 June 2007 [possibly insert a more precise designation with a number or similar] on the minimum quality control and assurance requirements. These specifications are intended to ensure a comparable and consistent application of the international specifications for German inventories. The international commitments and the Coordinating Committee's decisions are prepared by the Single National Entity and made available to the <institution> as a guide
4. If the data provided by the <institution> does not meet the requirements of section 2, the <institution> is obliged to rectify this. The Single National Entity may set a reasonable deadline for rectification, taking into account the timely completion of the national inventory.<sup>8</sup>
5. [Placeholder for special requirements in individual cases]

## **§ 5**

### **Contact Person**

1. The <institution> shall name the Single National Entity [for each subject], its contact persons and representatives, including any auxiliary data, in particular address, telephone number, fax and e-mail.
2. The <institution> undertakes to obtain written consent from the data subjects prior to the transmission of personal data to the Single National Entity, after having comprehensively informed them about the extent of transmission, use and further processing by the Single National Entity, in particular submission to third parties for further processing according to § 7.  
Insofar as changes in the processing and use of personal data result after the consent of the persons concerned, the <institution> is obliged to obtain the consent of the person concerned.
3. For its part, the Federal Republic of Germany appoints contacts to the <institution>, including the respective auxiliary data.
4. The parties undertake to inform the other party immediately of changes in the responsibilities of the contact persons and the auxiliary data.

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<sup>8</sup> If necessary, a penalty should be provided at this point. The amount should be based on the usual amount of fines in case of breach of statistical information obligations.

## § 6

### Data processing and data usage

1. In the context of emissions reporting, the Federal Republic of Germany is, in principle, authorised by the Single National Entity to process and use the data transmitted by the <institution>, insofar as this is necessary for the preparation of the national inventory [*and for the preparation of the national inventory of air pollutants as defined by the Geneva Air Pollution Convention and the NEC Directive*].
2. In particular, the Single National Entity is authorised to transmit the data to specialized units of the Federal Environment Agency, other authorities or contract reporting entities. This also applies to the data to be kept secret according to § 7.
3. Insofar as the <institution> transmits personal data from individual member companies, it is obliged to obtain written consent from the affected natural persons prior to transmission. The natural persons concerned must be fully informed prior to granting consent of the extent to which the data transmitted is processed and used by the National Coordination Office, in particular or transmitted to third parties for inventory preparation and processed and used there. Insofar as changes in the processing or use of personal data by the Single National Entity or third parties result after the consent of the member companies has been granted, the <institution> is obliged to obtain the consent of the persons affected in the member companies.

## § 7

### Confidentiality

1. The Federal Republic of Germany undertakes to keep secret data that allows conclusions to be drawn on business and trade secrets which the <institution> has identified. Insofar as the Single National Entity transmits data in accordance with § 7, the Federal Republic of Germany guarantees the secrecy of the data specified in sentence 1 by the recipients. The provisions of the Environmental Information Act remain unaffected.
2. In publishing the national inventories [*and the national inventories on air pollutants as defined by the Geneva Air Pollution Convention and the NEC Directive*], the Federal Republic of Germany undertakes to summarise the data to be kept secret in accordance with section 1 to the extent that conclusions cannot be drawn therefrom.
3. By way of derogation from section 1, the Single National Entity may require the data to be kept secret for the purpose of a central or detailed international inventory review in accordance with its international obligations to the expert review groups provided for in Article 8 (2) of the Kyoto Protocol. It has to mark the data to be kept secret according to section 1 as such. This marking by the Single National Entity triggers an internationally provided secrecy protection.

## § 8

### Copyright

Without prejudice to §§ 6 and 7, the parties reserve the copyrights to the data provided by them.

## § 9

### Participation in international inventory reviews

Under its obligations under this agreement, the <institution> undertakes to cooperate in the international inventory review pursuant to Article 8 of the Kyoto Protocol. This applies in particular to the preparation of the international inventory review by the expert review groups. In the event of a central or detailed international inventory review, the <institution> is not authorised to invoke the confidentiality of trade and business secrets adverse the expert review groups. However, the <institution> should mark secret data as such. The expert review groups are obliged by the secretariat appointed by Article 8 of the Framework Convention on Climate Change to keep the correspondingly labelled data confidential.

**§ 10**  
**Data storage**

1. The <institution> is required to retain the data at least until the conclusion of the last international inventory review by the expert review groups after the end of the current commitment period.
2. The Federal Republic of Germany is authorised to store the data by the Single National Entity.

**§ 11**  
**Entry into force and duration**

1. This agreement enters into force on [date]. It will continue in force indefinitely.
2. The agreement can be terminated on April 1 of each year with effect for the following year.
3. The <institution> agrees, even in the event of termination, to cooperate in the execution of the contract, in particular in the context of the subsequent cooperation with the expert review groups.

**§ 12**  
**Final provisions**

1. Existing agreements between the <institution> and the Federal Environmental Agency (e.g. on the implementation of national or international programs and projects) remain unaffected by this agreement
2. The annex is an integral part of this agreement.
3. Changes, additions and the repeal of this agreement must be made in writing. This also applies to the agreement that a form other than the written form should be introduced.
4. Should individual provisions of this agreement be ineffective or cannot be carried out for legal reasons, this shall not affect the remaining provisions of the agreement. The same applies to a regulatory gap. In place of the ineffective, impracticable or incomplete provision, the agreement shall be supplemented or interpreted in such a way that the aims pursued by the parties are achieved as far as possible.
5. Changes to the international or community law obligations of the Federal Republic of Germany have no influence on the effectiveness of this agreement.
6. The agreement is made in duplicate. Each party receives a copy.

# ANNEX III

## Checklist for external data delivery

Data provider (institution):

Responsible person:

Delivery date:

Delivered data (description):

Delivered data (brief summary):

Collection units:

Range of time series: starting year:  latest year:

Reporting period:

Period of enquiry:

Primary data: provider has directly collected or measured data

Secondary data: provider gets data from other institutions

### Type of data acquisition

Survey	<input type="text"/>	yes/no
Measurement	<input type="text"/>	yes/no
Sampling procedure with projection	<input type="text"/>	yes/no
	<input type="text"/>	yes/no
Expert estimation	<input type="text"/>	yes/no
Others:	<input type="text"/>	yes/no
In case of "others" please describe:	<input type="text"/>	
Margin for Error (in %)	<input type="text"/>	Indication of uncertainty
Measured	<input type="text"/>	yes/no
Expert estimation	<input type="text"/>	yes/no

### Temporal comparison

Given		
not given		<i>(restriction of possible comparability with data from previous years through change in; period, methodology, due dates, collection characteristics or main units)</i>
If not given: For which time periods is the temporal comparison given?		
Why is the time series not consistent?		

### Completeness

Data reproduces complete main unit / population		yes/no
Data does not reproduce main unit / population		yes/no
Share of main unit/ population (in %):		%
Share was estimated:		yes/no
Share is known:		yes/no

### Quality assessment

Units checked and correct		yes/no/irrelevant
Conversion factor checked and correct		yes/no/irrelevant
Data input checked from second person and correct		yes/no/irrelevant
Data aggregation checked and correct		yes/no/irrelevant
Current year was compared with previous years		yes/no/irrelevant
Unusual trends were explained		yes/no/irrelevant
Quality checks documented		yes/no
Data and relevant metadata documented		yes/no/irrelevant

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