



Climate Change
and Air Quality

SECOND BIENNIAL UPDATE REPORT of SOUTH AFRICA

Facilitative Sharing of Views
Bonn, Germany
19 June 2019



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA



PURPOSE

- The Republic of South Africa signed the United Nations Framework Convention on Climate Change (UNFCCC) in June 1993 and ratified it in August 1997.
- Support provisions in articles 4 and 12 of the Convention. Also provisions in Art. 5, 7, 9 & 10.
- Decision 1/CP.16: Parties decided to enhance the reporting in national communications, including inventories from Non-Annex I Parties, on mitigation actions and their effects, as well as support received and needed.
- Decision 2/CP.17 and its Annex, BUR guidelines for parties not included in Annex I of the Convention as well as modalities and guidelines for the ICA
- The Enhanced Transparency MPGs build on existing guidelines of NCs and BURs

SA International Reporting Status

	Reports	BURs ICA (Technical Analysis)	BURs ICA (FSV)
2003	1 st National Communication with GHGi for 1990, 1994		
2004-2010	-	-	-
2011	2 nd National Communication with GHGi for 2000 (2006 IPCC Guidelines)		
2012	-	-	-
2013	-	-	-
2014	1 st Biennial Update Report with NIR for 2000-2010 (2006 IPCC Guidelines)		
2015		1 st BUR Technical Analysis and Summary Report	
2016			FSV for 1 st BUR
2017	2 nd Biennial Update Report with NIR for 2000-2012 (2006 IPCC Guidelines)		
2018	3 rd National Communication with GHGi summary for 2000-2012 (2006 IPCC Guidelines)	2 nd BUR Technical Analysis	
2019	3 rd Biennial Update Report for 2000-2015 (2006 IPCC Guidelines)	2 nd BUR TA Summary Report	FSV for 2 nd BUR

BUR PROCESS IN SA

Data Collection & Drafting the BUR

- Initially, the DEA set up a national intergovernmental PSC to oversee drafting of BURs, NCs and NIR. DEA is the chair of PSC.
- The Scoping of a BUR takes place internally 1st. The extent of updating previously
- Look into the previous summary reports and how improvements can be made in the current BUR depending on the extent to which capacity needs have been addressed
- Finalisation of scoping report
- Preparation of data request templates in line with the guidelines of each chapter
- No formal institutional arrangements, more of an understanding between us and data providers facilitated by the PSC.
- Drafting commences
- Process could take about 8 months

Stakeholder Consultation

- The ZOD BUR gets reviewed internally
- FOD gets finalised after review by the PSC
- FOD gets published for public comments for about 30 days
- Public Comments get addressed taking guidelines into account.
- A public response database is developed with every comment and how it was addressed.
- Process could take about 4 months

Independent Review

- Independent reviewer reviews BUR in line with the guidelines as well as recommendations made in the previous summary reports. DEA and reviewer address comments together and finalise the BUR together
- Process could take about 4 months

Ministerial Approval

- The BUR is at a stage where it is being presented to the Minister for approval.
- Process could take about 2 months

Submission to the UNFCCC

- Target date to submit to submit the BUR by December every 2 years from 2014.
- To date, SA submitted BUR-1 by December 2014 BUR-2 by December 2017 and BUR-3 by June 2019

BUR-2 National Circumstances

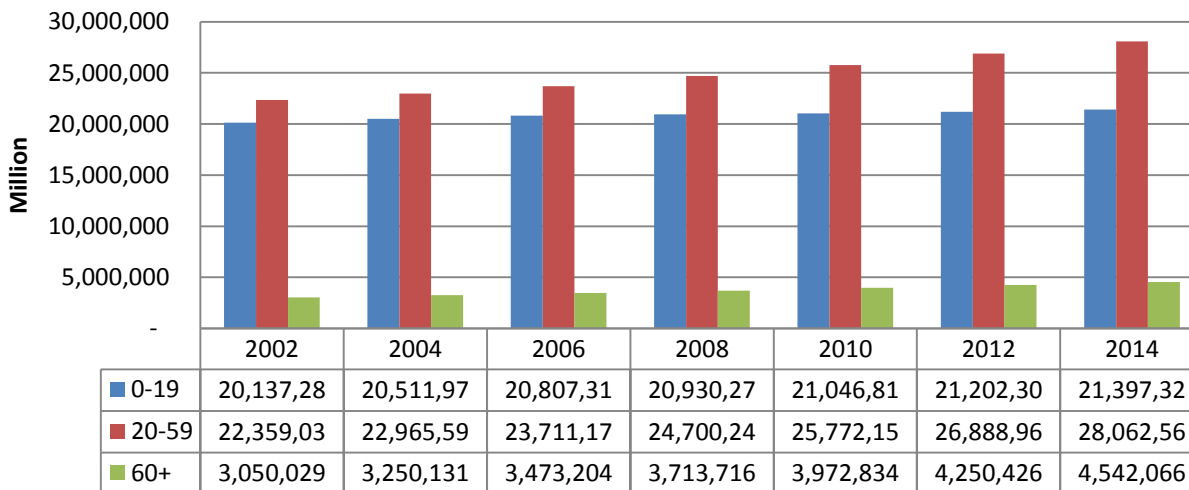
Institutional Arrangements

- The South African government comprises three levels (national, provincial and local government). The high level institutional arrangements for climate change response and reporting comprises of the Parliament and Portfolio Committees, the Inter-Ministerial Committee on Climate Change (IMCCC), the Forum of South African Directors-Generals, Intergovernmental Committee on Climate Change (IGCCC) and the National Committee on Climate Change (NCCC).
- DEA is responsible for co-ordination and management of all climate change-related information such as mitigation, adaptation, monitoring and evaluation programs. *Preparation of NCs, BURs and NIRs was coordinated by the Chief Directorate: Climate Change Monitoring and Evaluation*
- *A standing Project Steering Committee (PSC) has been established by the Director General of the DEA to assist the authors in providing oversight on the compilation of these reports; including reviewing and providing inputs on technical information to ensure the reports reflect the national circumstances. The PSC is chaired by DEA and comprises of national Departments whose mandates are affected by climate change.*

BUR-2 National Circumstances

Population

- By mid 2014, SA's population was estimated to be 54 million
- SA one of the most urbanized countries in Africa with nearly 2/3 living in urban areas (Turok, 2012). This mainly due to economic opportunities

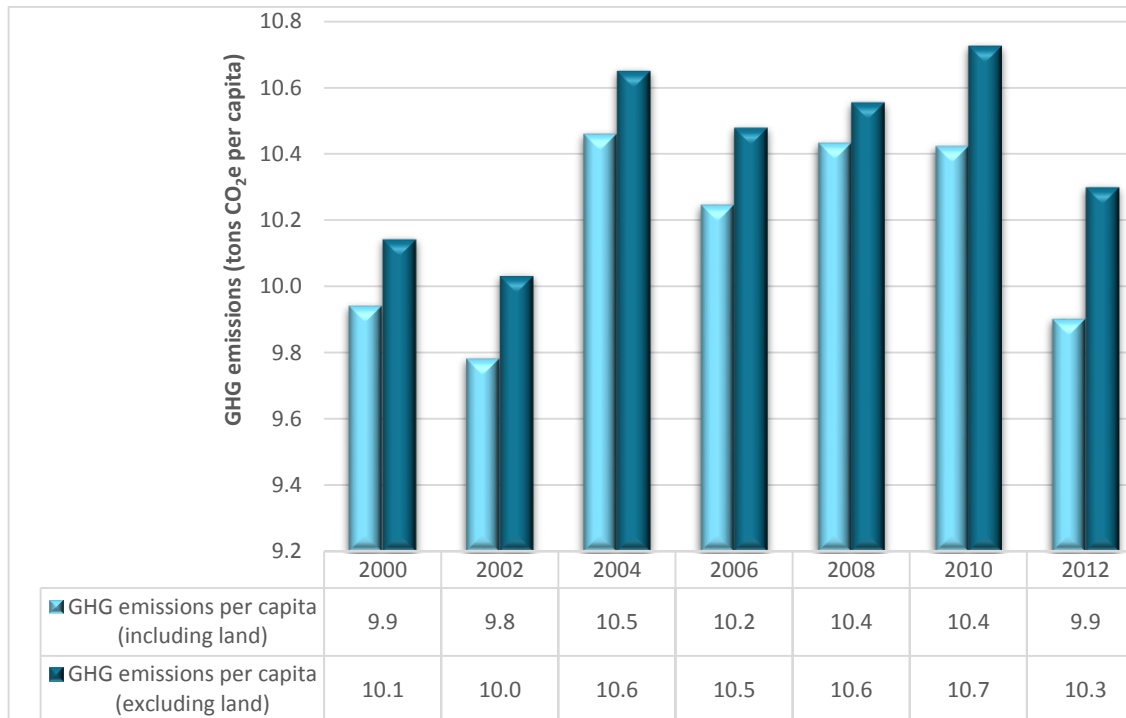


South Africa's population by age group from 2002 to 2014, (StatsSA ,2014a)

BUR-2 National Circumstances

Emissions per Capita

- The South African GHG emissions per capita (including land) averages 10.7 tons CO₂e over the period 2000 to 2012 and is among the higher per capita emissions in the developing world due to our reliance on a coal based energy production system.



BUR-2 National Circumstances

Economy

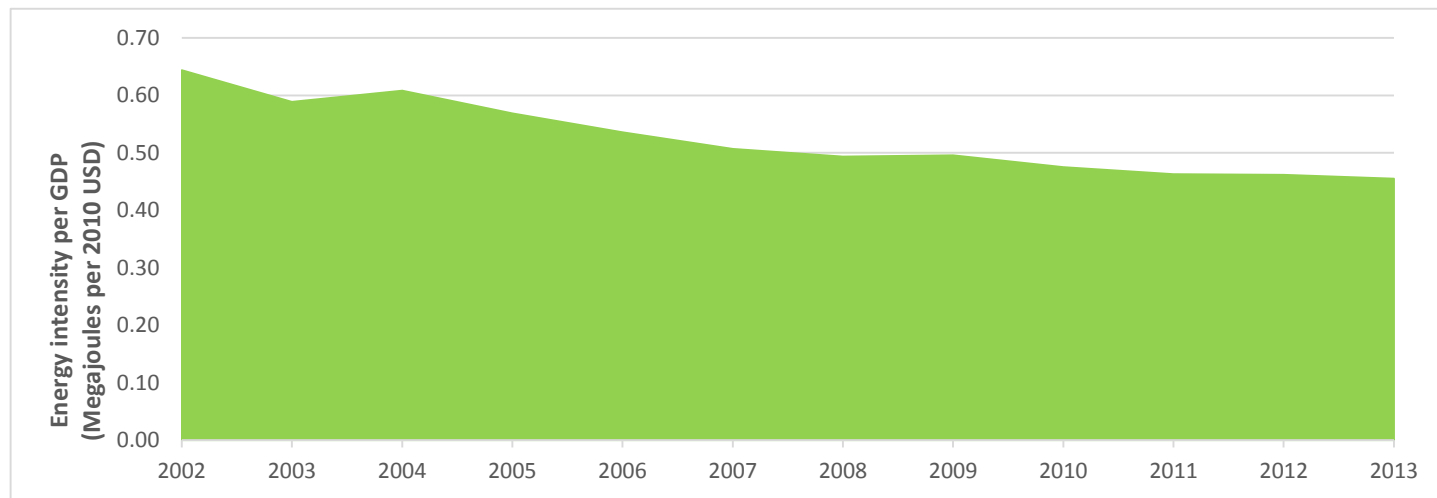
- **GDP:** USD 313 billion in 2015 (31st in the world)
- **GDP Growth** +1.3% in 2015
- **GDP by Sector** Agriculture: 2.4%, Industry: 28.9%, Services: 68.7%. South Africa has a well-developed mining, transport, energy, manufacturing, tourism, agriculture, commercial timber and pulp production, service sectors, and it is a net exporter of energy, food, telecommunications, and other services to neighbouring countries.
- **Population below poverty line:** 35.2% in 2012
- **Unemployment:**25%
- **Public Debt:** 44.4% of GDP in 2015



BUR-2 National Circumstances

Energy

- South Africa has traditionally been a major supplier of mineral commodities globally and the total energy consumption per unit of GDP is about 50% higher than the world's average. The high level is due to significant energy intensive industries and the grade of coal used in the energy supply system.
- South Africa's energy intensity has shown a consistent decrease over time dropping by 35.6% between 2002 and 2010 and by 39.6% between 2002 and 2013. South Africa's IRP for the period 2010-2030 incorporates objectives which include affordable electricity, carbon mitigation, reduced water consumption, localisation and regional development, producing a balanced strategy toward diversified electricity generation sources and gradual decarbonisation of the electricity sector.



South Africa's energy intensity per GDP (2002-2013)(Source:
Compiled from (Stats-SA, 2014b); (Stats-SA, 2017); and
(SARB, 2014))

BUR-2 National Circumstances

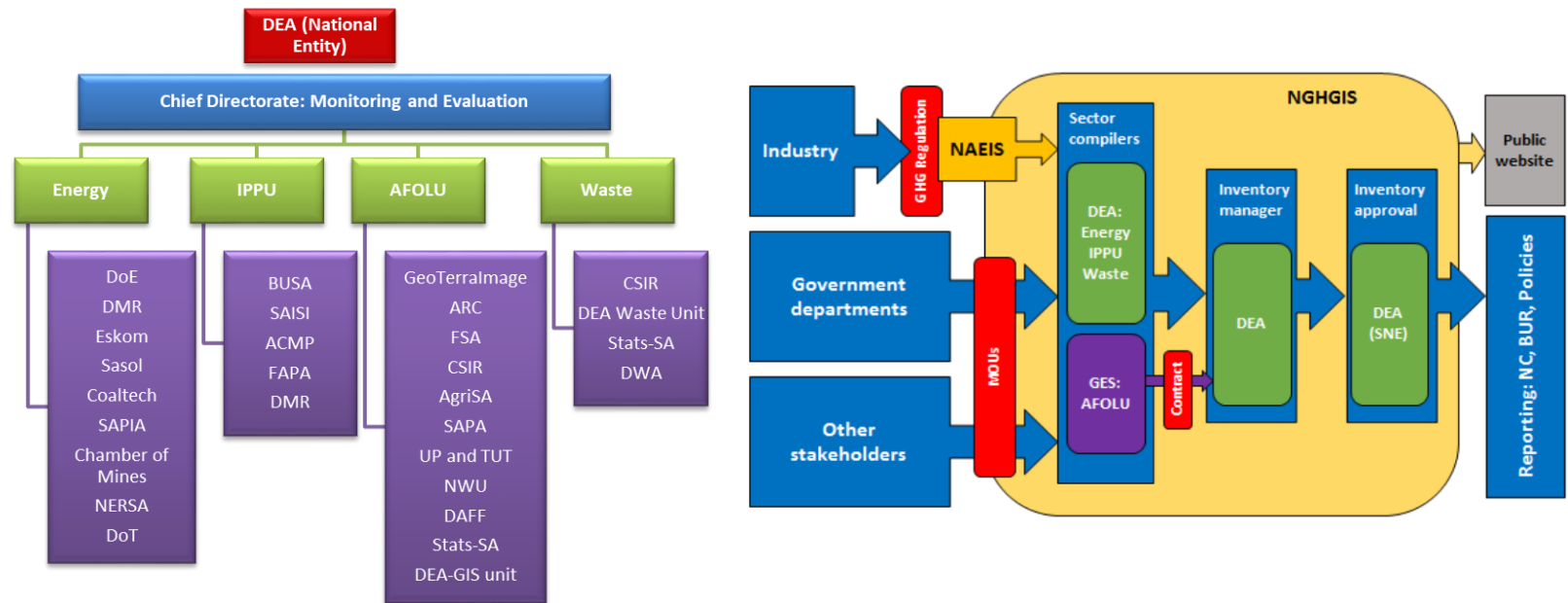
Climate

- Climate change impacts experiences over recent years include drought, flooding, extreme storms and fires.
- To address the adverse effects of natural disasters, recent changes have been made through the Disaster Management Amendment Act 2015 (Act no 16 of 2015) to cement the concept of climate change impacts and risks in legislation.
- The Act further requires that the respective organs of state must indicate how they will invest in disaster risk reduction and climate change adaptation, including ecosystem and community based approaches (COGTA, 2015).



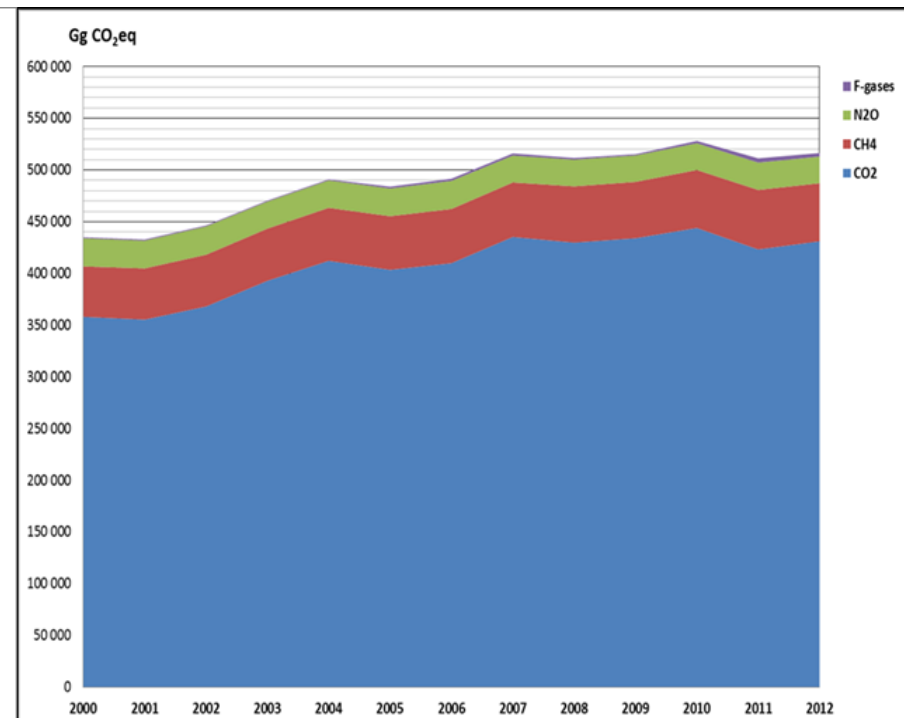
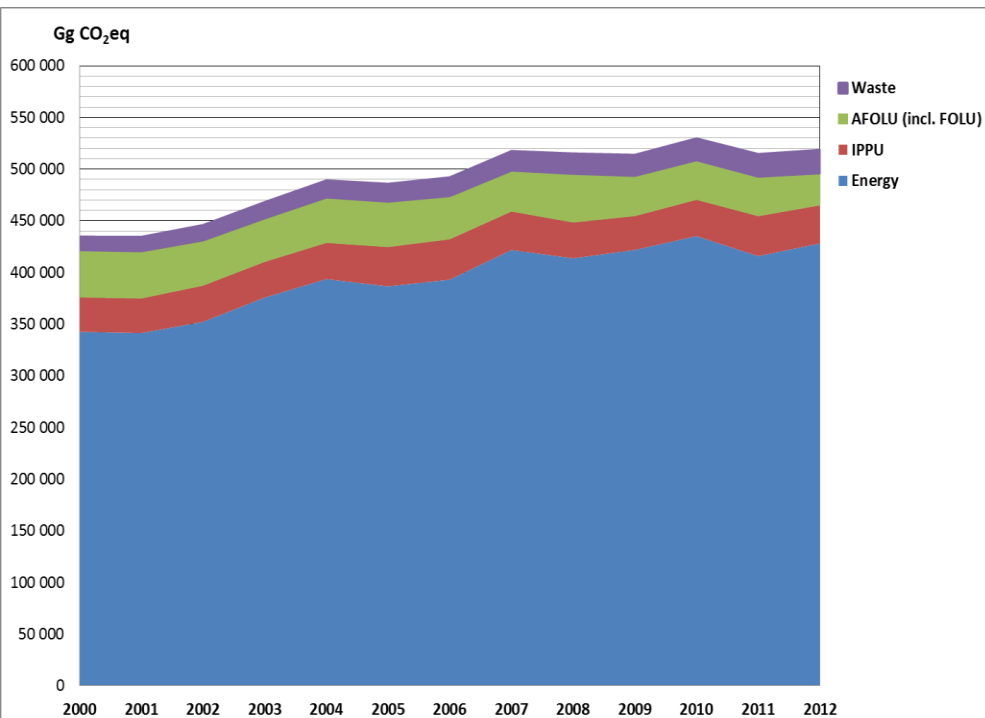
BUR-2 GHG Inventory

- There is currently no legal mechanism to formalize information flows through this institutional arrangement to ensure consistent and sustainable data input for the GHG inventory. This is currently being addressed through the development of GHG reporting regulations and guidelines under the existing National Environmental Management Act: Air Quality (Act No. 39 of 2004, as amended) and the National GHG System as reflected below. The National Greenhouse Gas Emissions Reporting Regulations were published in April 2017, thereby officially launching the company level GHG reporting program in South Africa.



BUR-2 GHG Inventory

- SA used 2006 IPCC guidelines to estimate emissions for 2000-2012 time series
- South Africa's National GHG Inventory time series from 2000 to 2012 shows a steady increase in trend, with annual declines in absolute emissions of 0.7% between 2004 and 2005 and 1.6% between 2007 and 2008, as well as the highest decrease of 2.7% recorded between 2010 and 2011. These declines are largely attributed to a reduction in fuel combustion activities and fugitive emissions; showing a direct correlation with the decrease in GDP reported for the Mining and Manufacturing sectors over these periods, which depicted South Africa's GDP per sector. Total net GHG emissions trends showed an increase of 16.21% over this period, rising from 434,304 GgCO₂e in 2000 to 518,297 GgCO₂e in 2012. (overall trends, analysis by sector & gas)



GHG Improvement Programme & Recalculations

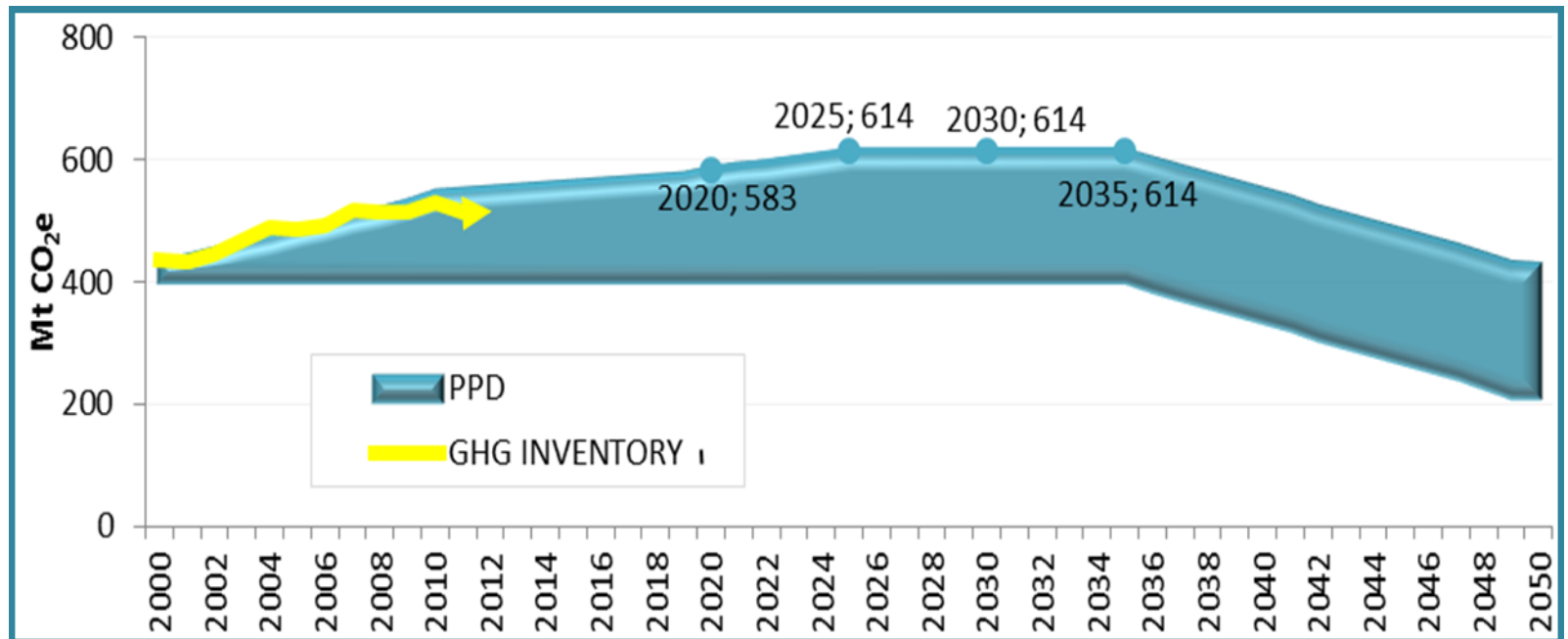
- GHG emissions were estimated using a combination of tier 1 and tier 2 methodologies from the 2006 IPCC Guidelines for most source and sink categories. For some categories (e.g. ammonia production, aluminum production and nitric acid production), South Africa used tier 3 methods.
- The recalculation of the Energy emissions resulted in an increase of 1.5% and 1.6% in the 2000 and 2010 estimates respectively. The IPPU emissions were recalculated due to updates in the iron and steel production emission factors, updated ferromanganese activity data and updated zinc production data. Recalculations resulted in a 20% reduction in the IPPU GHG emissions in 2010, mostly because of the adjusted emission factor for the iron and steel production.
- The recalculations performed for the AFOLU sector had the greatest impact, with changes of 50.4% and 49.6% for the 2000 and 2010 estimates respectively. The majority of these changes were due to the availability of updated land change maps and corrected HWP estimates. For the Waste sector, recalculations revealed a decrease of 1.2% in 2000 however an increase of 2.8% in 2010. These changes were as a result of the availability of updated information and statistics of waste generated and waste disposal.

Mitigation Actions & Effects

- Reported information on mitigation actions tabular format, with quantified effects; mitigation actions without quantified effects and additional mitigation actions that were not included in BUR-1 are presented in BUR-2. Quantified effects are the GHG emission reductions and environmental and social co-benefits which have been determined or calculated.
- Additionally, there are policies and plans in place as reported to promote the reduction of GHG emissions. For example, IEP, National Energy Efficiency Strategy, REIPPP, IRP, Public Transport Strategy, National Waste Management Strategy, the carbon tax, carbon offsets, Desired Emission Reduction Outcomes (DEROs) for sectors, company level carbon budgets as well as regulatory standards and controls for GHG pollutants and emitters, etc.

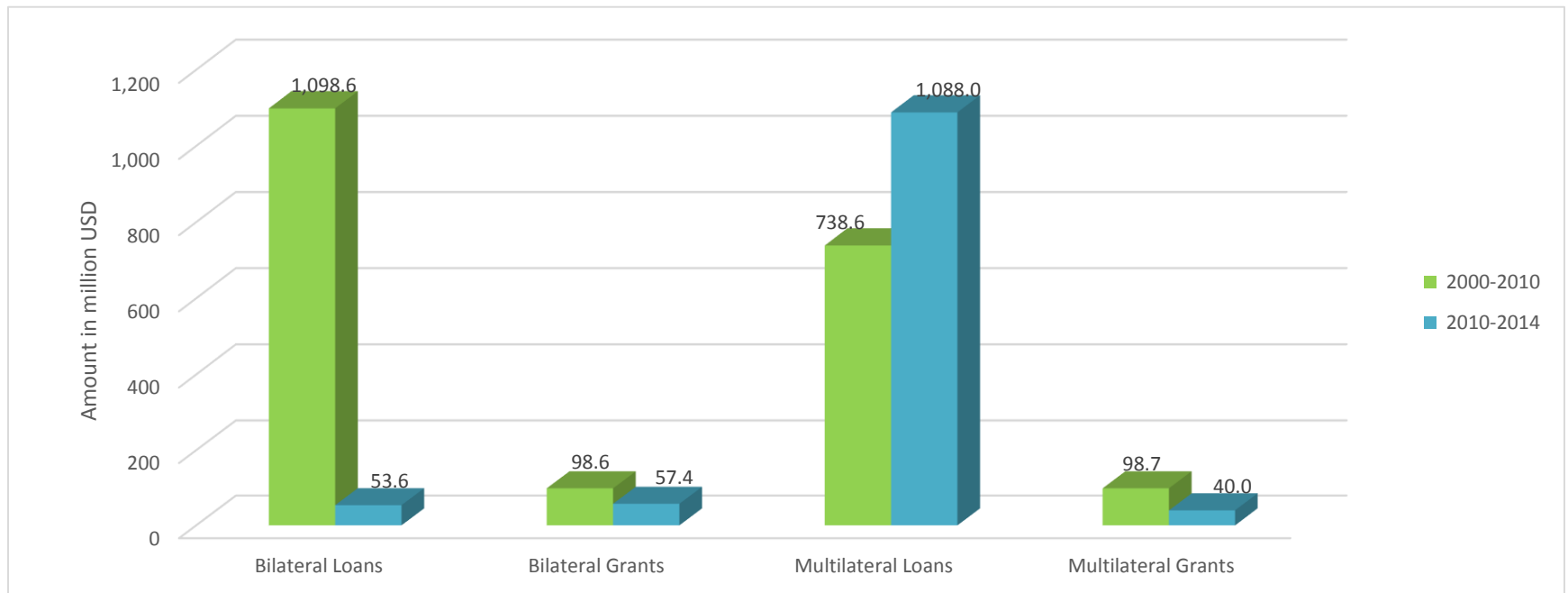
Mitigation Actions & Effects

- The below figure shows South Africa's 2000-2012 GHG inventory emissions compared to the PPD emissions trajectory range as well as the mitigation target of the NDC.
- SA implemented mitigation actions that contributed to estimated cumulative GHG emission reductions of 593.4 Mt CO₂e in the period 2000–2014, with the National Energy Efficiency Strategy response measures being responsible for most of the emission reductions.



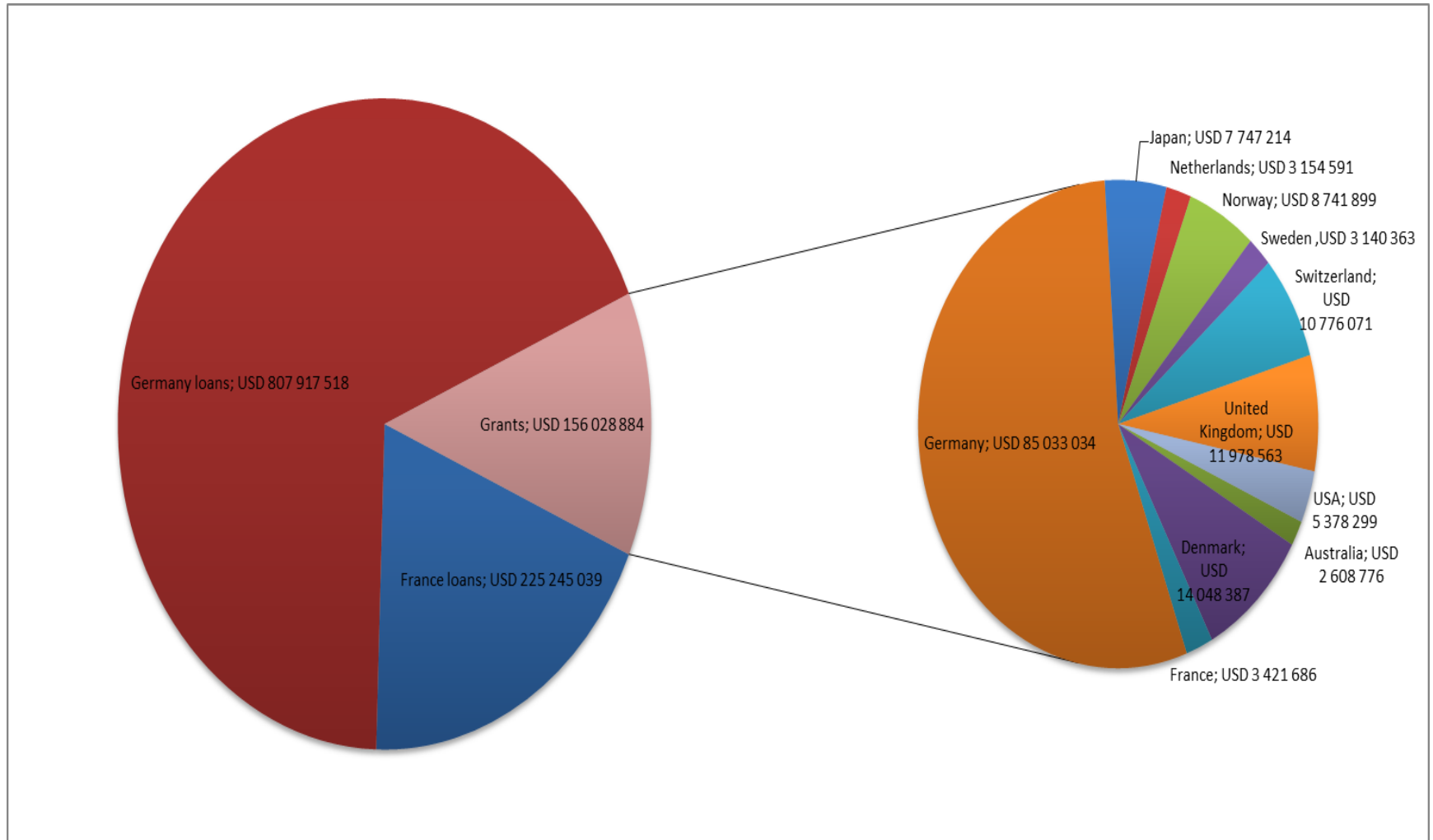
Finance, Technology and Capacity-Building Needs and Support Received

In an effort to reduce GHG emissions and implement climate change mitigation, financial support is needed to fund and implement these programmes. For the period 2000-2014, South Africa received international bilateral and multilateral financial support to amounting to USD 3,273.5 million USD. Of this, 294.7 million and USD 2,978.8 million USD were the form of grants and loans of respectively, as illustrated in the figure below.



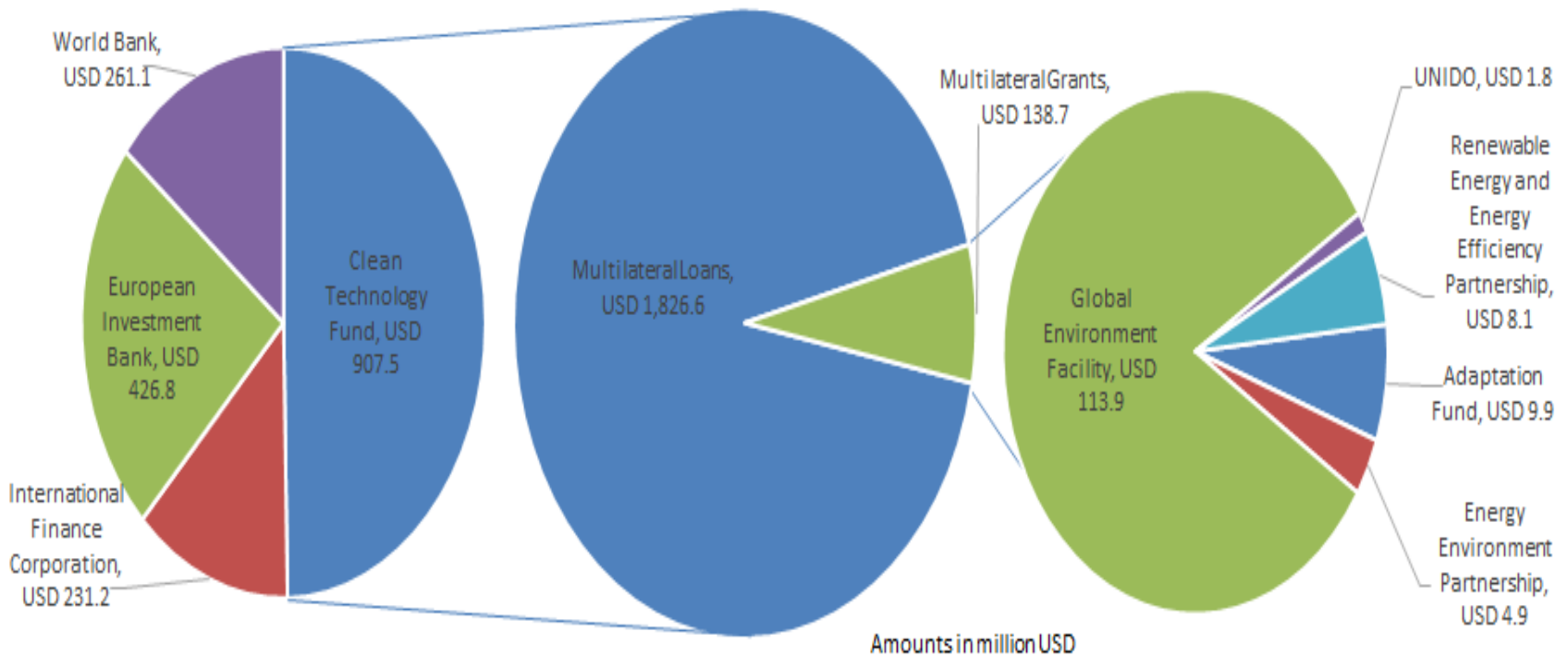
Bilateral Support Received

The bilateral loans and grants received/committed per donor country is presented graphically in Figure 24 (below), indicating 67.9% of the bilateral funds were received in the form of loans from Germany, 19% as loans from France, while the remaining 13.1% was grant funding received from various donor parties, as depicted in the figure below



Multilateral Support Received

- An analysis of multilateral support South Africa received for the period of 2000-2014 is shown below. The contribution received/committed as loans (pie chart on the left), make up 92.9% of the multilateral funds received. Nearly half of the multilateral loans were received through the Clean Technology Fund at USD 907.5 million (49.7%), with USD 426.8 million (23.4%) channelled through the European Investment Bank, USD 261.1 million (14.3%) channel through the World Bank and USD 231.2 million (12.7%). The contributions received/committed as grant funding is depicted in the pie chart on the right. Most of grants (82.1%, USD 1239.9 million) were received through the Global Environment Facility



Other Types of Support

- SA also reported on non-monetized support received and needed (capacity building & technology support received Sec 4.2.3 of BUR-2)
- Financial support needs in tabular format, not quantified but indicated what type of support needed as well as reference to policies & measures (section 4.3.1)
- Technology & Capacity building needs reported in tabular format (section 4.3.2)
- Further capacity building needs identified by the TTE in consultation with SA are available in SA's summary report published on 10 January 2019.
- SA has addressed some of capacity building needs esp. in the GHG inventories in the 3rd BUR submitted on 5 June 2019

Domestic MRV

- South Africa reported information on its domestic MRV arrangements. SA has National Climate Change Monitoring and Evaluation System as the overall system for monitoring all climate change information, policies, strategies and actions. The system is not yet fully operationalized and many systems including the NGHGIMS and the Mitigation system are still fragmented . Some of CBIT funding of SA is meant to assist with wit fully integrating existing system as well as operationalizing it.

Additional Information

- SA also reported additional information voluntarily on SA's near term priority flagship projects, progress on the National Adaptation Strategy, LTAS, Let's Respond Tool kit (Capacity Building for our local government to mainstream climate change into municipal Integrated Development plans IDPs), 2050 Pathways Calculator, Partnership for Market readiness, etc.

ICA (Technical Analysis & FSV)

- SA's 2nd BUR was submitted on 28 December 2019
- The technical analysis of the BUR took place from 5 to 9 March 2018 in Bonn (Non-Punitive, Non-Intrusive & Respectful of National Sovereignty)
- South Africa responded to clarifications of the TTE through the checklist & identified CBN with the TTE. SM was published on 10 January 2019
- TTE noted improvements in the quality of reporting from 1st to 2nd BUR (eg. TTE commended SA for applying T2 and T3 methodologies to improve accuracy of emissions estimates)
- TTE also commended SA for improving TTE on transparency of the reporting on the quantification of emission reductions since the 1st BUR. SA took into consideration recommendations of the previous TTE and quantified impacts most of the actions in Table 15 & provided information on methodologies & assumptions.
- FSV online questions kick started on 15 April to 15 June
- Questions received from Turkey, USA, EU, United Kingdom of Great Britain & Northern Ireland & Canada
- Questions ranged from the following aspects: GHG Inventory, Mitigation Actions & Effects (NCCRP, Carbon Tax, NEES & Carbon Budgets) & Tracking Climate Finance
- All questions were answered before the FSV end period

Challenges & Key Lessons Learnt

- BUR-2 was developed completely within DEA, high staff turn over resulted in unexpected delays in BUR-2 finalisation & GHGi which was more than 4 years behind the year of submission. This also affected full implementation of QC procedures and more reliance was on QA through independent reviewers.
- It is essential to have National MRV systems, assist with easier and faster updating of data & analysis as well as improving consistency. SA was able to submit BUR-3 faster due to the existence of domestic MRV systems such as the NGHGIMS.
- Data collection for both BUR and NIR is not yet formalised, resulting in sometimes delays in getting the data. The need to have a more formalised data collection process exist. GHG mandatory reporting regulations is one way of achieving this. Data often collected at national levels rather than point or direct sources for some categories, making it challenging to use higher tier methods for some key categories
- Country specific EFs have enabled SA to improve the accuracy in estimating emissions. GHG Improvement programme is key for SA in better estimating its emissions.
- Improvements made since the 2nd BUR are documented in the recently submitted BUR-3



Thank You

Sandra Motshwanedi

Email: SMotshwanedi@environment.gov.za

Department of Environmental Affairs

Climate Change; Air Quality and Sustainable Development

Chief Directorate: International Climate Change Relations & Negotiations

International Reporting on Climate Change: BURs, NCs, CBIT & ETF



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