FACILITATIVE SHARING OF VIEWS
REPUBLIC OF SERBIA

10 November 2017

Part I: Summary of BUR and recent development

Institutional arrangements

- **Ministry of Environmental Protection**/Ministry of Agriculture and Environmental Protection – climate change, reporting.

  - **Climate Change Division** - UNFCCC FP, policy related issues (EU acquis)

  - Serbian Environmental Protection Agency - GHG inventory system, inl. activity data QA/QC, analysis of key categories, archiving data and GHG inventory preparation and maintaining

- **Activity data sources:** SEPA; Statistical Office; Ministry of Mining and Energy; Ministry of Interior, Traffic Police, industrial plants and FAO
- **Ministry of Mining and Energy; Ministry of Construction, Transport and Infrastructure**; **Ministry of Economy; Ministry of interiors and Ministry of Finance**
- **National Climate Change Committee**
- **Faculty for Mechanical Engineering**

Relevant facts (1)

- Party to the:
  - **UNFCCC** since 2001
  - **Kyoto Protocol** since 2008; **Doha Amendment** ratified
  - **Paris Agreement** since August 2017
- **EU candidate** - March 2012 (Energy Community Treaty)
- Located in **southeastern Europe**, in the central part of the **Balkan Peninsula**, the smaller, northern part in **Central Europe**
- The climate moderately **continental**
- From **1960 to 2012** the **mean annual temperatures raise**. The temperature increases were higher in the northern than in the southern parts
- The **hottest year** was **2000**, with a positive anomaly of 1.86°C followed by 2008, 2007, 1994 and 2012. The most severe heat wave was recorded in 2007

Relevant facts (2)

- **Energy sector** - 10% GDP

- Electricity production: combustion of low quality domestic lignite and the use of hydropower potential
- Consumption in households and the public and communal activities sectors increased significantly compared to the industry

- **Industrial sector -** 22.4% GDP

- The average growth rate in 2000 to 2010 was 0.4%
- Industrial production increased in 2013 compared to 2012 by 5.5%

- **Road transport** traditionally the most developed mode

- Priorities of transport development - to reduce the volume of road transport, railway revitalization and improvement of water transport

- **Agriculture** - 7.9% GDP

- 2000-2012: the index of the physical volume of agricultural production has doubled, with an average growth of 9.4%

- **Waste management -** 1.2% GDP, a real growth rate of 0.3% in 2012
- 2000-2013 - 1.15% **change in land use** (pastures and agricultural land into construction land)
- **Forests** covered app. 25.5% of the total territory

GHG inventory

Total and sectoral GHG emissions

Source and sink category	1990.	2010.	2011.	2012.	2013.	Промена 2010–2013.
Emissions	*CO_2 equivalents (Gg)*					%
Energy	65,730.38	51,004.86	53,919.72	48,671.48	49,661.06	-2.6
Industrial processes	4,871.13	4,201.66	4,482.80	2,662.35	3,031.42	-27.9
AFOLU sector (Agriculture, and other Land Use)	9,078.22	6,466.23	6,459.43	6,378.09	6,620.96	2.4
Waste	3,839.77	3,140.90	3,165.05	3,246.97	3,207.45	2.1
Total emissions excl. removals	**83,519.50**	**64,813.65**	**68,027.00**	**60,958.89**	**62,520.88**	**-3.5**
Removals	*CO_2 equivalents (Gg)*					%
AFOLU sector (Forestry)	-16,855.36	-16,558.87	-16,733.17	-16,733.17	-15,737.06	-5.0
Total emissions incl. removals	**66,664.14**	**48,254.78**	**51,293.83**	**44,225.72**	**46,783.83**	**-3.0**

GHG by gas

Greenhouse gas	1990.	2010.	2011.	2012.	2013.	Change 2010–2013.
Emissions	*CO_2 equivalents (Gg)*					%
CO_2	67,453.74	52,647.76	55,452.26	48,098.22	49,307.21	-6.3
CH_4	10,960.93	8,200.09	8,447.43	8,725.14	8,689.75	6
N_2O	5,104.83	3,897.07	4,047.20	4,028.43	4,380.58	12.4
HFCs	0.00	68.72	80.11	107.10	143.33	108.6
PFCs	0.00	0.00	0.00	0.00	0.00	-
SF_6	0.00	0.00	0.00	0.00	0.00	-
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GHG emissions trends

- **2010-2013**

- Total: decreased by 3.5%, in 2013 compared to 2010

- **Sector:**

- Energy - 79.4% total GHG emissions; decrease 2.6%
- Industrial processes - 4.8% total GHG emissions; decrease 24.0%
- AFOLU - 47.5% total GHG emissions without removals; decrease 9.7%
- Waste management - 5.1% total GHG emissions; increase 2.1%

Mitigation actions

RES capacity added and energy produced

RES source	Scenario		"With measures"	"With additional measures"
	Year		2020.	2020.
RES for electricity				
Hydro	Installed capacity	MW	438	540
	Energy produced	GWh	1,831	2,257
		ktoe	157	194
Wind	Installed capacity	MW	500	650
	Energy produced	GWh	1,250	1,625
		ktoe	107	140
Sun	Installed capacity	MW	10	75
	Energy produced	GWh	14	105
		ktoe	1	9
Biomass	Installed capacity	MW	143	238
	Energy produced	GWh	1,001	1,666
		ktoe	86	143
Geothermal	Installed capacity	MW	1	1
	Energy produced	GWh	7	7
		ktoe	0.6 ~1	0.6 ~1
RES for transport				
Biofuels	Energy produced	ktoe	246	246
RES for heat				
Biomass	Energy consumed	ktoe	84	84
Geothermal	Energy consumed	ktoe	10	10
Solar thermal	Energy consumed	ktoe	55	55

RES NAMA Projects

Name	National Implementing Entity	Status	Estimated emission reduction
NS-33 – Use of Solar energy for domestic hot water production in the heat plant "Cerak" in Belgrade	Public Utility Company District Heating Plants of Belgrade and Business Association "Heating Serbia"	Seeking support for implementation	12,220 t CO_2eq (20 years) Methodology applied for estimation: General calculation method used in IPCC Guidelines Estimated annual emission reduction: 611 t CO_2eq/year
NS-37 – Revitalization of the Existing Small Hydropower Plants and Construction of New Small Hydropower Plants (SHPPs)	Public Enterprise Electric Power Industry of Serbia	Seeking support for implementation	4.10 Mt CO_2eq; estimation is calculated based on the 40 years of technical life time from installation Estimated annual emission reduction: 102,500 t CO_2eq/year
NS-35 – Introduction 1000 MW of small biomass boilers in Serbia	Ministry of Energy, Development and Environmental Protection	Seeking support for implementation	Total reductions 10.36 Mt CO_2eq for 25 years Estimated annual emission reduction: 414,400 t CO_2eq/year

Targets per sector of final energy consumption

Classification of indicative targets per sector of final energy consumption					
Sector	Final energy consumption y 2008.	Targets until 2012.	Share of target until 2012.	Targets until 2018.	Share of target until 2018.
	Mtoe	Mtoe	%	Mtoe	%
Residential buildings + public and commercial services	3,219	0,0235	19	0,2749	37
Industry	2,832	0,0566	45	0,2668	35
Transport	2,310	0,0453	36	0,2107	28
TOTAL	8,360	0,1254	100	0,7524	100

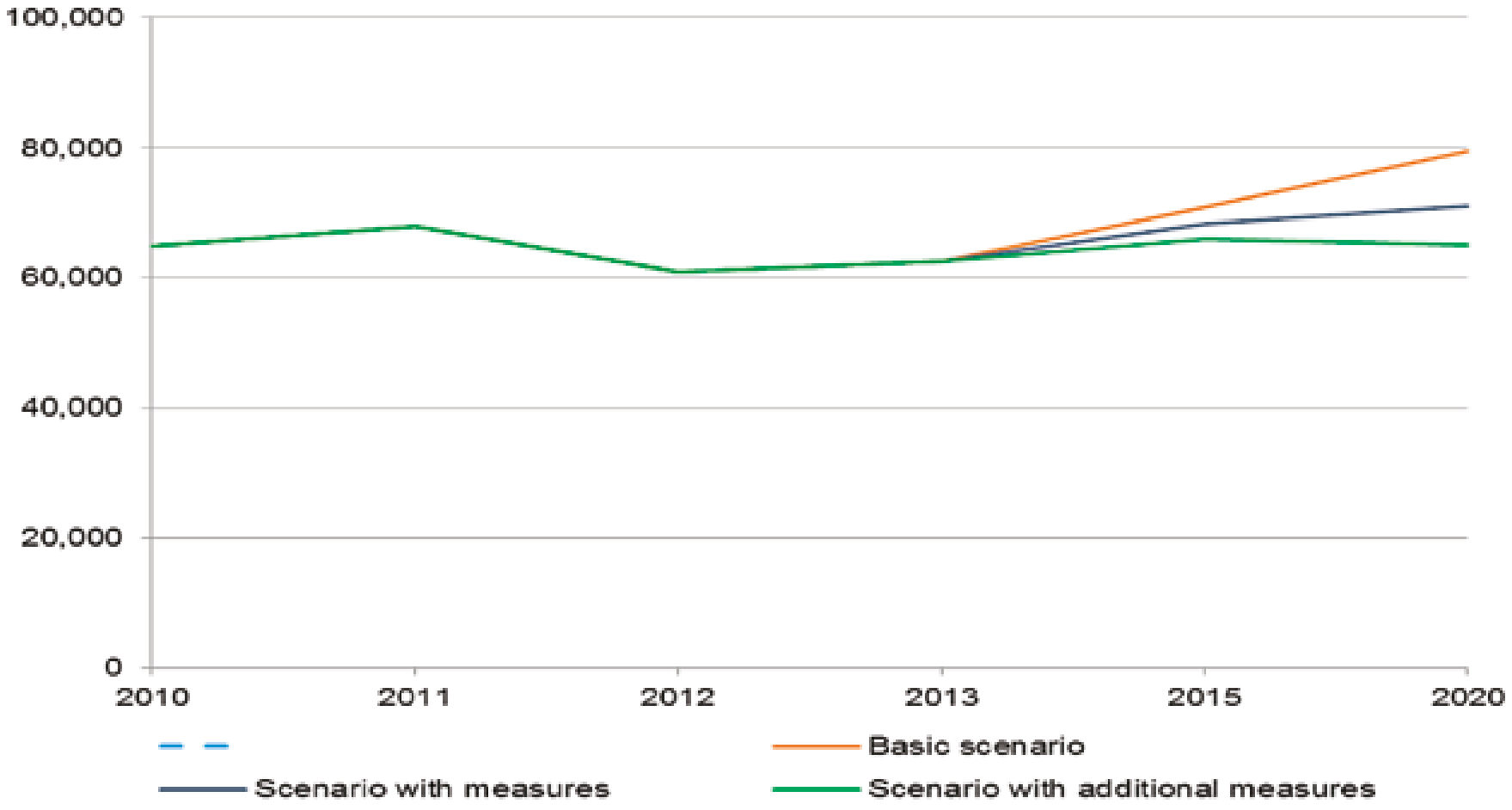
NAMA Projects Energy Efficiency

Name	National Implementing Entity	Status	Estimated emission reduction
NS-46 – Improvement of old residential building envelopes (exterior doors, windows and thermal insulation) in Serbia	Ministry of Construction and Urban Planning	Seeking support for implementation	Total CO2 reduction for the 30-year period is 15,119,070 t CO_2 eq. The calculations were made with the assumption of the total floor areas to be rehabilitated in existing buildings and the total annual energy consumption before and after implementation. Estimated annual emission reduction: 503,969 t CO_2eq/year
NS-41 – Energy Efficiency Improvements in Public Buildings: 23 schools and 26 hospitals – Serbian Energy Efficiency Project (SEEP)	Ministry of Energy, Development and Environmental Protection	Seeking support for implementation	Total reduction: 208,150 Mt CO_2eq over 25 years Estimated annual emission reduction: 8,326 t CO_2eq/ year
NS-36 – Rehabilitation of arterial roads in Serbia	Public Enterprise "Roads of Serbia"	Seeking support for implementation	Total reduction: 5,234 t CO_2eq (20 years) Methodology applied for estimation: Computer Programme to calculate Emissions from Road Transport (COPERT 4) Estimated annual emission reduction: 266,2 t CO_2eq/ year

NAMA infrastructural projects - Energy sector

Name	National Implementing Entity	Status	Estimated emission reduction
NS-34 – Thermal Power Project with Capacity and Efficiency Increase II – TTP Nikola Tesla – Unit A3	Public Enterprise Electric Power Industry of Serbia	Seeking support for implementation	1.40 Mt CO_2eq; estimation is calculated based on the 15 years of technical lifetime of installation after reconstruction. Estimated annual emission reduction: 93,333 t CO_2eq/ year
NS-39 – Thermal Power Project with Capacity and Efficiency Increase I – TTP Nikola Tesla – Unit B2	Public Enterprise Electric Power Industry of Serbia	Seeking support for implementation	5.30 Mt CO_2eq; estimation is calculated based on the 15 years of technical lifetime of installation after reconstruction. Estimated annual emission reduction: 353,333 t CO_2eq/ year
NS-40 – Construction of a Super-critical Lignite power Plant TTP Kostolac B	Public Enterprise Electric Power Industry of Serbia	Seeking support for implementation	56.0 Mt CO_2eq; estimation is calculated based on the 40 years of technical life time after installation Estimated annual emission reduction: 1,400,000 t CO_2eq/ year
NS-50 – Replacement and Construction of a New Natural Gas Cogeneration Plant CHP Novi Sad	Public Enterprise Electric Power Industry of Serbia	Seeking support for implementation	36.00 Mt CO_2eq; estimation is calculated based on the 35 years of technical life time after installation Estimated annual emission reduction: 1,028,571 t CO_2eq/ year
NS-31 – Expansion of existing heating network in Valjevo	City of Valjevo	Seeking support for implementation	252,270 t CO_2eq (30 years) Methodology applied for estimation: General calculation method as used in IPCC Guidelines Estimated annual emission reduction: 8,409 t CO_2eq/year
NS-32 – Introduction of metering system and billing on the basis of measured consumption in district heating systems in Serbia	Public Utility Company District Heating Plants of Belgrade and Business Association "Heating Serbia"	Seeking support for implementation	6,582,340 t CO_2eq (20 years) Methodology applied for estimation: applied from the Initial National Communication, which is based on IPCC Guidelines Estimated annual emission reduction: 329,117 t CO_2eq/ year

Results achieved



GHG emission reduction in 2020. compared to ”Baseline scenario”

”Scenario with measures”: -11%

”Scenario with additional measures”: -18%

State of implementation

- 45 MW of installed capacity (December 2014) for production of electricity from RES:

1) 45 small hydropower plants with the total installed capacity of around 33.5MW;

2) 72 solar power plants with the capacity of 6.7MW;

3) 1 wind power plant with the capacity of 0.5MW, while 5 wind power plants with the total capacity of 45MW have gained the temporary privileged producer status,

4) 5 biogas power plants with the total capacity of around 4.1MW

Data source: Register of Privileged Electricity Producers (http://www.mre.gov.rs/doc/registar28.11.html)

Planned and constructed RES power plants

Power plant type	Planned in line with NREAP [MW]	Current state, December 2014					
		Energy permits* [number and MW]		Temporary privileged producer status [number and MW]		Privileged producer status (constructed) [number and MW]	
HPP larger than 10 MW	250	2	106**	-	-	0	0
HPP up to 10 MW	188	23	74	-	-	45	33.5
Biomass	100	1	6.5	-	-	0	0
Biogas	30	1	3.5	-	-	5	4.8
Wind	500	6	52	5	45	1	0.5
Solar	10	2	12	40	3.3	72	6.7
Geothermal	1	0	0	-	-	0	0
Waste	3	0	0	-	-	0	0
Landfill gas	10	0	0	-	-	0	0

"-" data is not available

* Energy permits issued in January 2011 and later.

**Reconstruction of existing power plants

Note: Energy facilities are constructed in line with the law regulating the requirements for and manner of spatial planning, construction land development and use and facility construction, in line with technical and other regulations, upon previously obtaining energy permit which is issued in line with the Energy Act. The energy permit is issued with the validity period of three years that may be extended for one additional year.

Planned and constructed RES power plants

Power plant type	Planned in line with NREAP [MW]	Current state, October 2016					
		Energy permits* [number and MW]		Temporary privileged producer status [number and MW]		Privileged producer status (constructed) [number and MW]	
HPP larger than 10 MW	250	2	106**	-	-	0	0
HPP up to 10 MW	188	87	149	2	0.7	61	41.2
Biomass	100	4	17	-	-	0	0
Biogas	30	3	7	1	2	7	9.1
Wind	500	8	70	7	489.6	2	10.4
Solar	10	4	17	2	0.1	105	8.8
Geothermal	1	0	0	-	-	0	0
Waste	3	0	0	-	-	0	0
Landfill gas	10	0	0	-	-	0	0

"-" data are not available

* Energy permits for facilities up to 10MW issued in January 2011 and later. The energy permit is a document issued by the Ministry in charge of energy activities and it is necessary for receiving a building permit when constructing energy facilities of 1MW and more. The energy permit is issued with the validity period of three years that may be extended for one additional year. The number of issued energy permits can provide indicative information about future projects.

** Reconstruction of existing power plants

Planned and Constructed RES Power Plants, Developed under Feed-in Tariffs, until September 2017

Status Type of power plant	Energy permit		Temporarily privileged status		Privileged status built plants	
	Quantity (items)	Capacity (MW)	Quantity (items)	Capacity (MW)	Quantity (items)	Capacity (MW)
SHPP	67	62.000	11	6.881	80	52.384
biomass	2	11.295	0	0	0	0
biogas	1	3.570	2	1.634	10	12.332
wind	7	312.700	6	482.960	3	17.000
solar	1	3.150	0	0	106	8.786
geothermal	0	0	0	0	0	0
wastw	0	0	0	0	0	0
Landfill gas	0	0	0	0	0	0
Sum	78	460.715	19	491.475	199	90.502

MRV

- SEPA – GHG inventory system

- Procedures and methods for collection and archiving of data: Regulation on methodology for collection of data needed for preparation of GHG inventory

- IPA project (EU): ”Establishment of a mechanism for implementation of MMR”

- MRV system: monitoring and reporting on GHG emissions, policies, measures, projections, adaptation
- Law on climate change
- Complete in 2018, operational in 2019

Obstacles and barriers

- Lack of:

- Capacities and number of employees in SEPA, Climate Change Division,sectoral Ministries and data holders

- Defined responsibility and capacities for preparation of projections

- Capacities for reporting on implementation of mitigation actions

- Mechanism for monitoring and reporting on received financial support

- Awareness of general public

- Financial resources and technologies for mitigation infrastructural actions

Support received and needed

- Capacity-building - regional:
  - Austrian Environmental protection agency
  - ECRAN project (financed by the EC)

- First Biennial Update Report - Global Environmental Facility (total project budget was US$352,000)
- IPA 2012 (EC budget)/MMR EU ETS: 1, 000,000 EUR
- IPA 2013 budget/MMR: 1. 200,000 EUR
- IPA 2014 budget/Climate change strategy with the Action plan: 1. 000,000 EUR

Capacity building – needs

- To strengthen:
  - BURs preparation: Environmental Protection Agency, Climate change unit, sectoral ministries and activity data holders (trainnings for specific stakekolders/sectors)
  - Local comunities, idustries

  - Mitigation actions: Energy efficiancy Fund, Environmental Protection Fund, GEF project for local communities,

Financial needs – infrastructure

Energy	
Measures	**Necessary financial need (€)**
TEHT Б3 (750 MW)	1,600,000,000
TPP Kolubara B (2 x375 MW)	1,500,000,000
TPP Kostolac B3 (350 MW)	450,000,000
TPP Novi Kovin (2 x 350 MW)	1,330,000,000
TPP Stavalj (300 MW)	650,000,000 750,000,000
TPP HP Novi Sad (340 MW)	400,000,000
HPP Velika Morava (147,7 MW)	360,000,000
HPP Ibar (117 MW)	300,000,000
HPP Srednja Drina (321MW)	819,000,000
PS HPP Bistrica (4 x 170MW)	560,000,000
PS HPP Djerdap 3 (I phase) (2 x 300 MW)	400,000,000
Mini HPP (387 MW)	500,000,000
Revitalisation, modernization and construction of heat sources	90,000,000
Revitalisation and construction of distribution network	105,000,000
Revitalisation and construction of heat substation	45,000,000
Finalisation of gasification in the Republic of Serbia and rehabilitation of existing gas system	500,000,000

Financial needs – infrastructure

Waste sector	
Measures	**Necessary financial need (€)**
Construction of sanitary landfills	94,470,000
Construction of centralized composting plants	18,100,000
Buying compost bins for rural households	41,540,000
Costs of additional cleaning of 164 registered dumpsites	48,280.000
Costs of closing 4,481 dumpsites	94,830,000
Forestry	
Measures	**Necessary financial need (€)**
Afforestation	82,076,510
Regeneration of high forests	58,457,292
Reconstruction of devastated forests	5,094,291
Indirect conversion of coppice forests	23,522,299
Direct conversion of coppice forests	117,952,426
Rehabilitation of stands damaged by abiotic and biotic factors	4,665,102
Rehabilitation of fire-damaged stands	62,604,091
Forest certification	900,000
Development of strategic documents for forestry sector	794,880
National forest inventory	730,000
Research (developing capacities and implementation of projects)	94,025,000

Part II: Experience and lessons learned in participating in the ICA process

Preparing for the ICA process (1)

❖Has participation in the ICA process raised the profile of climate actions at the domestic level?

- Establishment of the **WG** (25 members incl. governmental, public and private companies, academia)
- **More intensive consultations** with stakeholders
- Inclusion of **CSOs** representatives in NCCC

Event/Place	Date	Participants	Governmental	Local communities	Public	Acadimia	Private	CSO
			%	%	%	%	%	%
1. Bajina Basta	6/23/2014	62	2%	10%	24%	8%	0%	48%
2. Novi Sad	6/26/2014	64	2%	8%	9%	19%	6%	56%
3. Nis	6/27/2014	66	2%	12%	6%	11%	0%	56%
4. Beograd	12/15/2014	96	31%	0%	17%	21%	5%	7%
5. Nis	5/29/2015	63	5%	22%	11%	5%	2%	41%
6. Bajina Basta	17-18/06/2015	82	2%	2%	20%	4%	0%	56%
7. Bor	6/26/2015	70	1%	14%	20%	16%	0%	29%
8.Beograd	4/20/2015	45	49%	2%	4%	11%	0%	13%

Preparing for the ICA process (2)

❖Has the BUR preparation enhanced domestic coordination/domestic MRV in providing climate related information? If so, how?

- Improved cooperation with stakeholders

- Improved GHG inventory system (QA/QC plan, improvement plan – EU ETS IPA project)

- Initiated IPA project (EU): ”Establishment of a mechanism for implementation of MMR”
- MRV system: monitoring and reporting on GHG emissions, policies, measures, projections, adaptation, BURs & NCs
- Law on climate change
- Complete in 2018, operational in 2019

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Enhancing transparency of reporting and areas for improvement

- What's the value addition of the technical analysis of BURs by the team of technical experts?

- Identified gaps and possibilities for improvement in reporting
- Capacity building activities
- Institutional and procedural arrangements - Law on climate change

Part III: Response to questions received

1. What types of capacity building activities would enable Serbia to strengthen its MRV system?

In the FBUR it is underlined the need for clear and precise definition of the responsibility for collecting and procedures for data submission and to improve data quality and the QA/QC procedures and the assessment of uncertainty, reporting and archiving. In this context necessity to strengthen the capacity of the Agency for Environmental Protection and Climate change unit (in the context of BURs preparation) was listed. Beside these building capacity of sectoral ministries and activity data holders is among priorities.

Development of trainning programme and organization of trainnings for specific stakekolders/sectors, transfering knowledge and experinance, including practical work on e.g. specific chapters of the BUR could significatly strengthen MRV system as a whole.

In regard to need for systematic and continuous effort to raise awareness of this issue among the general public, workshops on the level of local communities are forseen as the most efficiant tool. Those shall include presentation of practical solutions and examples already implemented in similar comunities, periodicaly repeated and organized in cooperation with local CSOs.

What are the plans of Serbia to improve the level of knowledge, institutional and individual capacities to promote mitigation measures?

Ministry of environmental protection in cooperation with sectoral ministries, at the first place the Ministry in charge for energy already implement activities that contribute to implementation of mitigation measures. Those are mostly regarding to energy efficiancy and RES through support for installatment of new boilers, fuel change etc. Feed in tarif was introduced and the Environmenta protection (EPF) and Energy efficiancy fund were established. Moreover, promotion of possibilities for use of such subsidies/incentives/funds has been realizing in cooperation with different donors and implementing agnecies. Recognizing importnace of local communities in these activities, the project financed by the GEF and EPF started in jun 2017, and its aim is to identify mitigation possibilities and support its implementation at the level of local communities. The project duration if 5 years and the main output of the project ishall be establishement of such programme at the national level. Moreover, the national Climate change committe if forseen as very important tool for promotion of combating climate change as well as continous improvement of cooperation with CSOs. Cooperation with the EC and the GEF through the national and regional projects is among the most usefull in the context of capacity building and raising awarness at the national level.

Could Serbia please provide more information on how, particularly without a key category analysis, it prioritized the planned improvements/capacity building needs of various inventory source categories over others? For example, the Technical Analysis Summary Report says that Serbia seeks to use higher Tier 2006 IPCC methodologies for Livestock, Off-road machinery, and Energy industry categories. How were these chosen?

Serbian Environmental Protection Agency (SEPA) has been preparing the GHG inventories on a yearly basis, including analysis of key categories. Therefore, SEPA has such analysis and based on it the improvements/capacity building needs are planned. It is not included into the BUR, which will be changed in the following reporting. In addition, under the two twining projects financed by the EC (IPA programming for 2013 and 2014) gaps and needs analysis of the GHG inventory and the GHG inventory system was done and recommendation report was prepared. Based on those higher Tier 2006 IPCC methodologies for Livestock, Off-road machinery, and Energy industry categories were identified as need.

Has Serbia taken any steps towards their capacity-building need on enhancing national arrangements and procedures for data collection and continuous inventory development? If so, are there any lessons learned that other parties looking to do the same thing could find useful?

Twining projects (financed by the EC), especially the project: „Establishment of a mechanism for implementation of Monitoring Mechanism Regulation (MMR)“: capacity-building activities on enhancing national arrangements and procedures for data collection and continuous inventory development are realized. Cooperation with Austrian Environmental protection agency (project on inventory development in Western Balkan countries financed by Austrian Government) as well as regional ECRAN project (financed by the EC).

Data collection and continuous inventory development requests:

1. establishment of clear and **legally** defined arrangements and procedures
2. improvement of cooperation with activity data holders
3. capacity building for representative of institutions that are activity data holders
4. development of the QA/QC procedures for the national inventory system
5. preparation of the Improvement plan

In general: establishment of the GHG inventory system is a process that requires sufficient number of employees (in the institution responsible for GHG inventory development and institutions that are responsible for activity data) and financial resources as well as transfer of experiences by more experienced institutions/Parties.

Serbia has created three scenarios for GHG emissions on the sectoral and total levels, could Serbia share some results of mitigation measures which of these have been implemented so far?

With use of incentive measures ("feed-in" tariffs) since December 2014, the following new plants with the installed capacity of 45 MW were constructed for production of electricity from RES:

1) 45 small hydropower plants with the total installed capacity of around 33.5MW;

2) 72 solar power plants with the capacity of 6.7MW;

3) 1 wind power plant with the capacity of 0.5MW, while 5 wind power plants with the total capacity of 45MW have gained the temporary privileged producer status,

4) 5 biogas power plants with the total capacity of around 4.1MW.

Data source: Register of Privileged Electricity Producers (http://www.mre.gov.rs/doc/registar28.11.html).

More details:

Overview of the planned and constructed power plants in the RES field

Power plant type	Planned in line with NREAP [MW]	Current state, December 2014					
		Energy permits* [number and MW]		Temporary privileged producer status [number and MW]		Privileged producer status (constructed) [number and MW]	
HPP larger than 10 MW	250	2	106**	-	-	0	0
HPP up to 10 MW	188	23	74	-	-	45	33.5
Biomass	100	1	6.5	-	-	0	0
Biogas	30	1	3.5	-	-	5	4.8
Wind	500	6	52	5	45	1	0.5
Solar	10	2	12	40	3.3	72	6.7
Geothermal	1	0	0	-	-	0	0
Waste	3	0	0	-	-	0	0
Landfill gas	10	0	0	-	-	0	0

"-" data is not available

* Energy permits issued in January 2011 and later.

**Reconstruction of existing power plants

Note: Energy facilities are constructed in line with the law regulating the requirements for and manner of spatial planning, construction land development and use and facility construction, in line with technical and other regulations, upon previously obtaining energy permit which is issued in line with the Energy Act. The energy permit is issued with the validity period of three years that may be extended for one additional year.

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HPP up to 10 MW	188	87	149	2	0.7	61	41.2
Biomass	100	4	17	-	-	0	0
Biogas	30	3	7	1	2	7	9.1
Wind	500	8	70	7	489.6	2	10.4
Solar	10	4	17	2	0.1	105	8.8
Geothermal	1	0	0	-	-	0	0
Waste	3	0	0	-	-	0	0
Landfill gas	10	0	0	-	-	0	0

"-" data are not available

** Energy permits for facilities up to 10MW issued in January 2011 and later. The energy permit is a document issued by the Ministry in charge of energy activities and it is necessary for receiving a building permit when constructing energy facilities of 1MW and more. The energy permit is issued with the validity period of three years that may be extended for one additional year. The number of issued energy permits can provide indicative information about future projects.*

*** Reconstruction of existing power plants*

Planned and Constructed RES Power Plants, Developed under Feed-in Tariffs, until September 2017

Status Type of power plant	Energy permit		Temporarily privileged status		Privileged status built plants	
	Quantity (items)	Capacity (MW)	Quantity (items)	Capacity (MW)	Quantity (items)	Capacity (MW)
SHPP	67	62.000	11	6.881	80	52.384
biomass	2	11.295	0	0	0	0
biogas	1	3.570	2	1.634	10	12.332
wind	7	312.700	6	482.960	3	17.000
solar	1	3.150	0	0	106	8.786
geothermal	0	0	0	0	0	0
wastw	0	0	0	0	0	0
Landfill gas	0	0	0	0	0	0
Sum	78	460.715	19	491.475	199	90.502