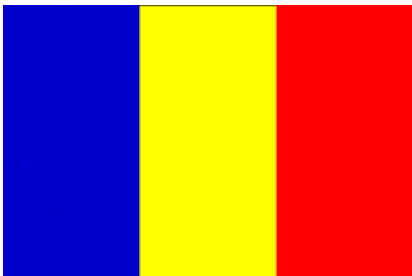


# Biomass Master Plan for Romania



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## Preface

Europe is facing a number of challenges in the field of energy: how can we secure energy resources, how can we improve security of energy supply and how can we reduce greenhouse gas emissions. Of course, we have to secure economic growth but, at the same time, ensure that we develop our society in a sustainable way. This calls for drastic actions in an international context.

Changing the fuel mix is one option for lowering our dependence on fossil fuels. Renewable energy is one solution. Several initiatives on a political level, as the Renewable Energy Directive 2009/28/EC, with the 20% goals for 2020, support the increasing need to shift from a fossil fuel-based society to a more renewable energy-based society. Bio-energy is an essential component in the fulfilment of the targets of this Directive by 2020.

Romania has a huge potential when it comes to renewable energy, in particular hydro, wind and biomass. Biomass will play an important role in the National Renewable Energy Action Plan, which has to be developed within the framework of the Renewable Energy Directive. The Ministry of Economy, Trade and Business Environment is taking the lead in developing this action plan.

This Biomass Master Plan guides us towards a sustainable energy supply in which biomass plays an important role. In the Biomass Master Plan we identified the important role biomass can play in our fuel mix. We also identified the most important stakeholders from government and industry and defined their role in the development of biomass as the most important renewable energy source in Romania. Together we can realise the EU obligations for renewable energy in 2020.

I would like to express my gratitude towards the experts from NL Agency of the Ministry of Economic Affairs in the Netherlands, for their contribution to this Biomass Master Plan.

Catalina Groza  
Director of the Division for International Cooperation and European Affairs  
Ministry of Economy, Trade and Business Environment.

Bucharest, June 2010

# INTRODUCTION

Romania now has the opportunity to make an important step towards making more efficient use of biomass. This would help Romania achieve the goals set out in the new EC directive on the use of energy from renewable sources, 2009/28/EC, reduce Romanian emissions of CO<sub>2</sub>, improve the efficiency of various industries and create new, both national and international, market opportunities for private companies.

The Romanian Ministry of Economy, Trade and Business Environment (METBE) is responsible for developing and reinforcing national policy on renewable energy and bioenergy.

The Ministry has requested assistance from the Netherlands to draw up a Biomass Master Plan for Romania. The Dutch Ministry of Economic Affairs asked the Dutch energy agency NL Agency (previously known as SenterNovem) to provide the required assistance.

The Romanian beneficiaries are the General Directorate for Energy, Oil and Gas and the Directorate for Quality Infrastructure and Environment, both part of METBE.

The Centre for Promotion of Clean and Efficient Energy in Romania (ENERO), which works as a subcontractor for NL Agency, has carried out 3 studies on biomass development in Romania:

1. Biomass potential and scenarios
2. Markets and technologies
3. Actors and organisation of the bioenergy field

This document contains conclusions and recommendations based on the results of these three studies. It contains also the comments made by the Romanian biomass experts during the consultation round held in September 2009.

NL Agency wishes to express their gratitude and satisfaction with the work carried out by ENERO.

# 1. THE PROJECT: A BIOMASS MASTER PLAN FOR ROMANIA

## 1.1 Background

On 25 September 2007 a workshop was held in Bucharest to identify the current status, potential, obstacles and opportunities for the use of biomass in Romania. Representatives from the Ministry of Economy, Trade and Business Environment (METBE), Ministry of Agriculture and Rural Development (MARD), Ministry of Administration and Interior (MAI), ARCE, as well as several other associations and institutions participated in this workshop.

The main conclusions of the workshop were:

- Romania does not currently have specific policies or targets for biomass in general, so the new Energy Strategy of Romania refers only in general terms to biomass. Targets were set for the proportion of Renewable Energy (RE) in energy consumption (11% in 2010) and for that of RE in electricity production (33% in 2010), but the contribution that biomass should deliver is not specified.
- Thanks to the EU Directive 2003/30/EC, there is a target (5.75% by 2010) for biofuels, plus regulations, and there is even a subsidy scheme for growing energy crops, but there is no designated association which can represent organizations in the field of biomass or biofuels.
- The potential for biomass in Romania is considerable, mainly from agricultural waste (60%) and forestry or wood waste (20%), which is currently used mainly for heating only.
- There are some isolated initiatives involving modern technologies e.g. in combination with sawdust used for heat production and gasification of wood for cogeneration.
- There is a lack of organisation in all three markets (heat, electricity, and biofuels).
- The main obstacles include the small farm size (on average around 2 ha), little cooperation, and a lack of collection system for agro-waste.
- Project financing continues to be a problem.

During the workshop the participants identified three areas in which Romania and the Netherlands could cooperate to solve a number of urgent issues:

- There is a need for a greater degree of organisation in the agricultural sector, to increase the production of bio-energy in Romania. Better coordination is needed, as well as exchange of information about exemplary projects, information points and pilot projects, alongside markets and a biomass platform.
- There is a need for an overall strategy for bio-energy in Romania, which clarifies the markets, target groups, and technologies that the country should focus on, sets clear targets, and coordinates individual actions, so that national and EU goals can be met.
- Generating energy from waste (landfill gas and waste incineration) might also be an interesting option.

After consultation it was decided to focus on developing a Biomass Master Plan for Romania. Such a plan should promote bio-energy, by providing a framework for policies, regulations, and individual actions.

Other elements that should be taken into account are:

- The heating market appears to be of most interest, using corn, straw and sawdust;
- The need to establish a biomass platform and develop a biomass market.

## **1.2 Overall scope, results and participants of the project**

The goal of the project is to develop a Biomass Master Plan to promote bio-energy in Romania in order to meet national and EU goals for renewable energy.

The project has the following aims:

1. The potential role of biomass in energy consumption will have been determined
2. The role of government actors and other stakeholders will have been determined and the biomass platform will have been established
3. A roadmap for developing biomass markets: how to achieve the targets
4. A Biomass Master Plan will have been written

The project focuses on the best use of biomass as a fuel for energy and transport in relation to the quota target for 2020, according to Directive 2009/28/EC.

Participants in the project were:

- Romanian Ministry of Economy, Trade and Business Environment (Counterpart) (contact: Mrs. Catalina Groza)
- General Division for Energy, Oil and Gas of METBE (Beneficiary) (contact: Mr. Alexandru Sandulescu)
- Directorate Quality Infrastructure and Environment of METBE (Beneficiary) (contact: Mrs. Cristiana Ion)

Other stakeholders were:

- Directorate for Excise Legislation and the Directorate for Licenses of METBE
- Ministry of Agriculture and Rural Development
- Ministry of Environment and Forestry
- Romanian Energy Regulatory Authority (ANRE)

During the project, information was exchanged with other project teams working on bio-energy (e.g. Biomass Action Plan (BAP) driver).

## **1.3 Activities**

The project plan focussed on knowledge transfer between Romania and the Netherlands and the following activities were organised:

1. A kick-off meeting in Romania
2. A study on the Romanian situation
3. A 4-day study visit
4. A one day workshop in Romania
5. A follow-up study
6. A one day workshop in Romania
7. A final one day workshop

Figure 1 provides an overview of these activities.



Figure 1

## 2. THE PROSPECTS FOR MEETING THE RES QUOTA BY 2020

This chapter is based on a study on the potential and scenarios for biomass production in Romania, as well as consultation with Romanian bio-energy experts.

### 2.1 Energy consumption

Romania's gross final energy consumption in 2020 was initially forecasted by the EC based on studies using the PRIMES model. According to the document "SEC (2008) 85/3, COMMISSION STAFF WORKING DOCUMENT IMPACT ASSESSMENT<sup>1</sup>", the final consumption in Romania in 2020 will be 34.9 Mtoe<sup>2</sup>.

More recent studies (RES2020, [www.res2020.eu](http://www.res2020.eu)) have reduced this figure to 30.48 Mtoe. The Romania forecast document, Table 9, projects 31,212 ktoe for gross final energy consumption and 28,507 ktoe for final energy consumption.

Since December 2009, the National Forecasting Committee has issued other forecasts (24 March 2010) which consider a 1,267 ktoe reduction of the final energy consumption in comparison to the previous estimation, reaching a value of 27,240 ktoe. This reduction may be transferred also to the gross final consumption. The most recent estimation for the final gross consumption by 2020 is stated in the NREAP draft, in the additional energy efficiency scenario, and is 30,278 ktoe. Therefore, this figure will be considered as reference from here on, meaning that the 24% quota is fulfilled by 7,267 ktoe from RES. It must also be mentioned that, independently from the NREAP study, the own estimation made within the Biomass Scenario Study is very close, 7,200 ktoe.

### 2.2. Different Renewable Energy Systems and their contribution

During the study, the maximum possible contribution of RES technologies by 2020 was estimated, based on the most consistent information currently available. Depending on market developments, these estimations may change over the years. It can be expected that society will choose the most suitable but also the cheapest available technology. Meeting the quota at minimal costs is rational for a country with limited financial resources, but may not be the wisest decision in the medium to long term, i.e. after 2020. This is why a compromise is needed between market forces and political goals. This is the purpose of strategic documents such as the Biomass Action Plan. Again, own estimations were made for the contribution of renewables other than biomass, close to the ones presented in the NREAP draft. Eventually, the NREAP figures were considered as reference figures:

- HIDROELECTRICA strategy considers a hydro-energy production of 20 TWh in its facilities (including some small hydro plants), while recent small hydro

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<sup>1</sup> [http://ec.europa.eu/energy/renewables/doc/sec\\_2008\\_85-2\\_ia\\_annex.pdf](http://ec.europa.eu/energy/renewables/doc/sec_2008_85-2_ia_annex.pdf)

<sup>2</sup> 1 Mtoe = 1,000 ktoe and 1 Mtoe = 41.868 PJ

- studies (i.e. PHARE 2008) indicate 2.3 TWh. The normalised value for energy from hydro is 19.46 TWh (1,673 ktoe) according to the NREAP draft.
- TRANSELECTRICA is currently considering that a maximum capacity of 3,000 MW of wind power may be integrated in the grid. Most probably, with further grid reinforcement than planned today and better dispatch of imbalances, some 3,600-3,700 MW may be acceptable by 2020, producing some 8 TWh. The output specified in the NREAP draft is 8.4 TWh (722 ktoe).
  - Geothermal heat is assumed to increase moderately in absolute terms, from today's level (some 35 ktoe) to 70 ktoe (an increase of 24 ktoe is estimated between 2011 and 2015 by the Romanian RES Strategy- GD 1535 /2008).
  - Solar heat is expected to make a comparable contribution by 2020, i.e. 75 ktoe.
  - The NREAP draft mentions 350 GWh (30 ktoe) output from PV by 2020
- In any case, the impact of geothermal heat, solar heat and PV together is limited (in the range of 2-3% of the total required RES output).

### ***2.3 The contribution of bio-energy in 2020***

Combining the information from the previous chapters 2.1 and 2.2, it is abundantly clear that the contribution to the renewable energy mix made by bio-energy will be large. Figure 2 shows that the bioenergy share has to be 4,690 ktoe (196 PJ).

Based on available biomass resources, bio-energy can make any decisive contribution. This unexploited potential is mainly related to the available arable land.

During the consultation, which was carried out within the framework of the G2G project, Romanian biomass experts agreed that biomass will make a significant contribution to reaching the targets set in the Directive. Biomass will contribute a large percentage of the total RES.

They also indicated that an integrated plan is needed, including measures for efficient use of agricultural land (to grow biomass) and suggestions to increase energy efficiency of biomass installations through financial programmes and instruments.

In conclusion, biomass (including biofuels for transport) will be the main contributor to RES – more than 65% of total, namely 4,690 ktoe per year, starting from the current value of around 3,350 ktoe/year (140 PJ/year). This is a further reason for giving the Biomass Master Plan a major role within the RES development policy.

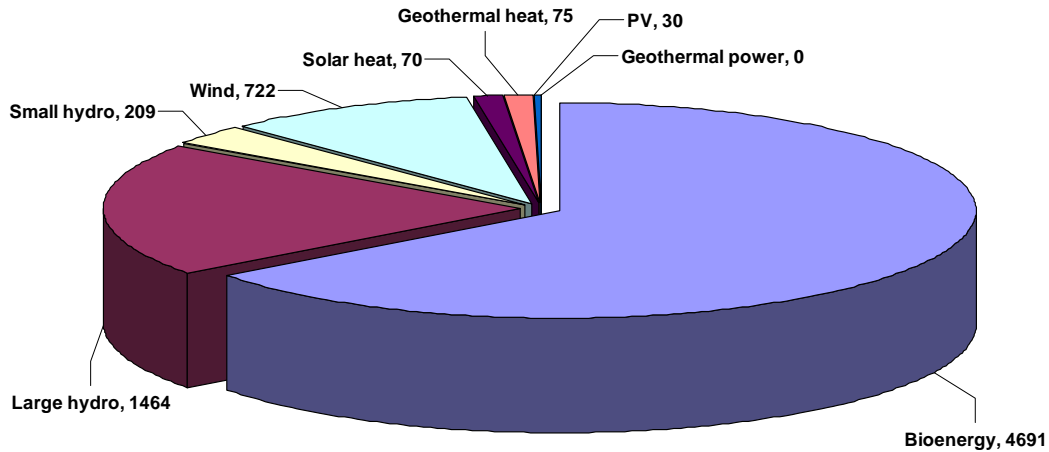


Figure 2. Scenario for RES contribution to 2020, in ktoe

## 2.4 Bio-energy use in different market segments in 2020

Bio-energy can be implemented in several market segments (electricity, heat and biofuels). In order to determine potential in these market segments we need to consider the following aspects.

### Biofuels

We assume that the mandatory 10 % minimum target for the share of biofuels in transport will be achieved by 2020, also for the highest consumption scenario of transport fuels. A biofuel consumption of 550 ktoe is considered in 2020, in accordance to the estimated energy consumption in transport. This shall happen in a cost-effective way.

### Domestic heating:

In the most recent years, with available data (2006-2008), the statistics on biomass final consumption show a total of some 140 PJ/year (3,350 ktoe/year), split into 121 PJ (2,890 ktoe/year) consumption in old rural traditional stoves (with around 18% efficiency) and 19 PJ (455 ktoe/year) in boilers in industry and tertiary sector. Traditional stoves fuelled by local biomass will remain an important consumer, but their contribution will diminish in time because the energy efficiency of new rural heating systems will steadily increase.

If the government will support the purchase of residential efficient biomass boilers, and promote the use of small efficient residential heating, the importance of local biomass will decline even further.

Given these considerations, we assume that the following trends will take place in the period from 2010 – 2020. Table 1 provides evidence for the fact that modernization of existing rural heating systems leads to a reduction in biomass gross final consumption.

Table 1- Possible development of existing biomass use from 140 PJ (3,350 ktoe/year) to 112 PJ (2,675 ktoe/year) in 2020

<b>Evolution between 2010 - 2020</b>		<b>Comments</b>
Switching from traditional biomass stoves to new local DH fuelled by biomass	approx. 20% of heating stoves	Leads to a reduction in consumption of approx. 18 PJ
Replacing traditional biomass stoves with residential efficient biomass boilers *	approx. 8% of heating stoves	Leads to a reduction in consumption of approx. 7 PJ
<b>Biomass consumption in remaining traditional biomass stoves</b>		<b>approx. 86 PJ/year</b>
<b>Biomass consumption in efficient residential biomass boilers, replacing 8% of old stoves</b>		<b>approx. 4 PJ/year</b>
<b>Biomass consumption in local DH replacing 20% of old stoves</b>		<b>approx. 6 PJ/year</b>
Modernization of some existing industrial boilers	Average increase in the efficiency of existing boilers: 15%	Leads to a reduction in consumption of approx. 3 PJ
<b>Biomass consumption in existing and modernised industrial boilers</b>		<b>approx. 16 PJ/year</b>
		<b>TOTAL 112 PJ/year</b>

*\*The RES directive, art. 13.6, specifies that Member States should promote boilers with high efficiency in residential heating*

#### Co-firing

Co-firing with biomass should be encouraged only for coal-fuelled cogeneration units. Here too, it is debatable whether or not biomass co-firing should be encouraged in obsolete, inefficient, large coal thermal plants. Taking also into consideration that biomass combined with coal leads to a rapid wearing out of the installations, it should be considered to promote only co-firing using new technologies. Moreover, co-firing may rapidly consume the biomass resources, with no visible improvements in technology. Not including biomass co-firing as a green technology eligible for receiving GCs may be justifiable.

#### Municipal waste

Using municipal waste for energy by 2020 is considered to be an important measure for environmental protection; municipal waste can also be an important source of raw material.

#### District heating and CHP

The rest of the required output will be split between the main biomass use technologies recommended for Romania: local district heating based on solid biomass (with efficient boilers or CHP units) and CHPs fuelled by biogas.

## 2.5 Results

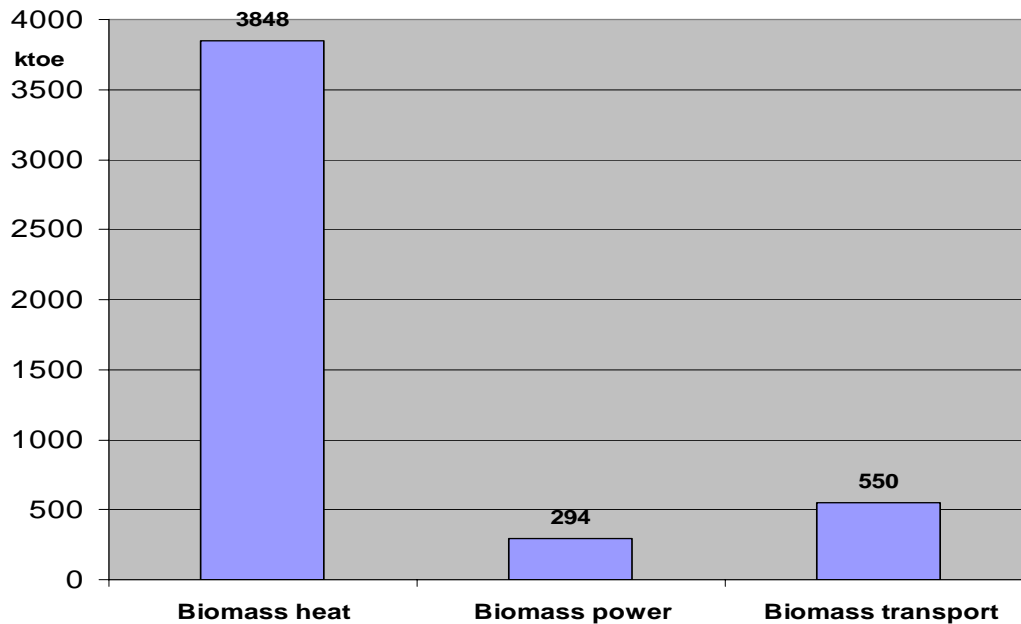


Figure 3. Biomass contribution to the Romania RES quota in 2020

With the abovementioned estimated decrease of existing biomass use, from 140 PJ to 112 PJ, new biomass options need to be defined, in order to achieve the target growth from 112 PJ to 196 PJ in Romania. Several options are available as presented in Table 2. In the next chapter we will describe how this can be achieved.

Table 2. Biomass technologies scenario for energy output, including biofuels, to 2020

Technology	2009		2020	
	ktoe	Share	ktoe	Share
solid biomass residential stoves/boilers	2,840	84.6%	2,794	59.6%
solid biomass local boilers & DH	56	1.7%	478	10.2%
solid biomass electricity CHP	2.4	0.1%	146	3.1%
solid biomass heat CHP	2.6	0.1%	175	3.7%
co-firing biomass power	1.0	0.0%	27	0.6%
co-firing biomass heat	0.0	0.0%	3	0.1%
biogas electricity CHP	1.7	0.1%	103	2.2%
biogas heat	1.9	0.1%	287	6.1%
municipal waste electricity CHP	0.0	0.0%	17	0.4%
municipal waste heat	0.0	0.0%	110	2.3%
biofuels	450*	13.4%	550	11.7%
<b>Total, ktoe/PJ</b>	<b>3,356/140</b>	<b>100%</b>	<b>4,691/196</b>	<b>100.0%</b>

\*a large part exported

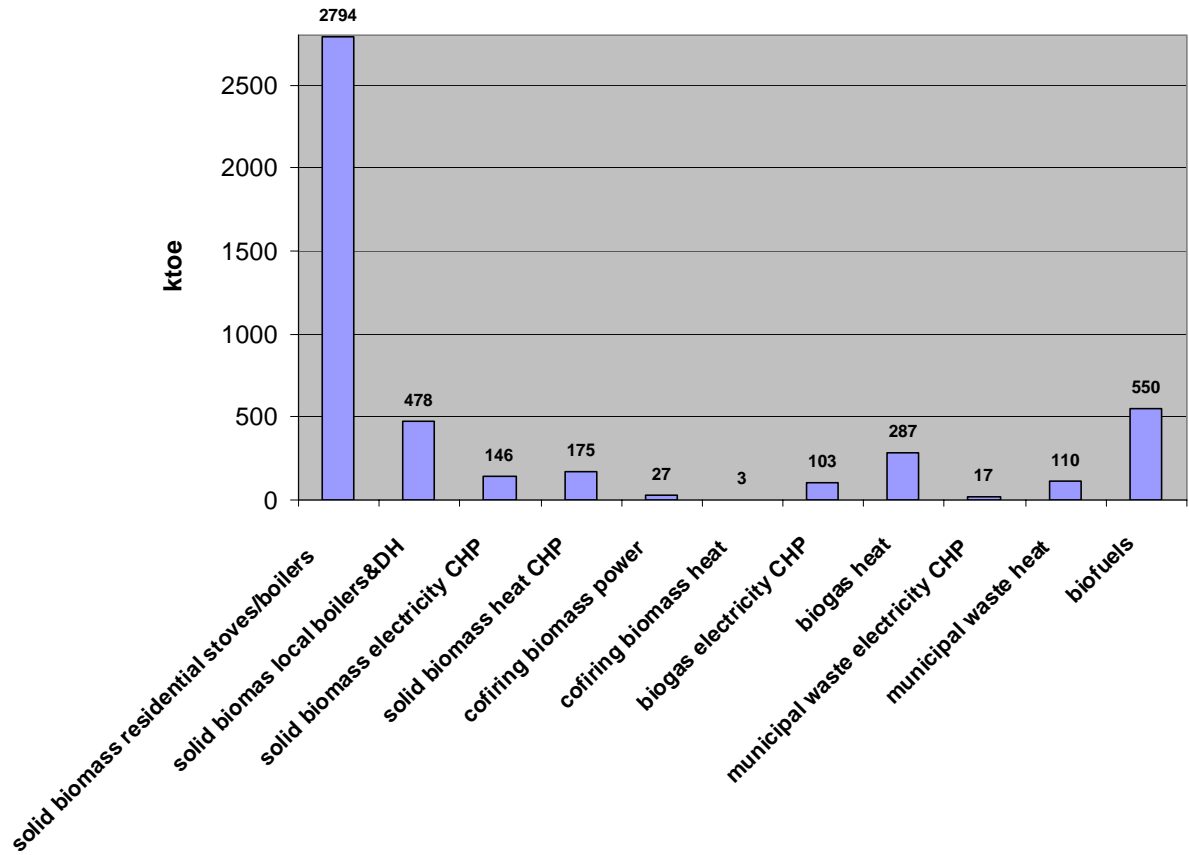


Figure 4. Biomass share scenario, contributing to the Romania RES quota in 2020

## **3. HOW TO ACHIEVE A MAJOR CONTRIBUTION FROM BIOMASS**

The results from this chapter are based on the second study of markets and technologies and consultation with Romanian bio-energy experts.

### ***3.1 Current conditions***

- There is traditional acceptance of the use of biomass for energy (heat).
- While the other RES technologies (small hydro, geothermal for heat) already have a mature position on the market or are making irreversible progress (biofuels, wind energy), the use of modern biomass technologies for heat and power is only just beginning to be accepted in the market.
- The current contribution of biomass is high, due to massive use of wood and agricultural waste in traditional rural stoves. As a result, any switch to a more clean or efficient use of biomass technology (as required by the RES Directive, art. 13.6) will lead to a reduction in the proportion of biomass in final consumption. By 2020 the major biomass contribution will come from heating in rural stoves. It is therefore important to take future technological developments into consideration.

### ***3.2 It is important to consider the following aspects***

- The rural area in Romania is well represented (approximately 40% of the population live there). The rural areas are close to biomass resources and are therefore suitable for decentralized, local heating systems.
- There are large potential amounts of forestry and agricultural waste available.
- There is considerable potential for biogas from agriculture and livestock farming.
- There is experience of collecting, depositing and using the biomass locally.
- There is the need to improve the use of biomass for heating. Heating security is one of the main social concerns.

### ***3.3 Efficient technologies***

Based on these conditions and considerations, the study recommends the following more efficient technologies for Romania:

- local heating and CHP using wood and straw;
- biogas generated by anaerobic digestion of organic waste streams.

These technologies need a specific focus, because after biofuels and wind they will be the main emergent resource for Renewable Energy in Romania. There are currently only a few Domestic Heating Plants from biomass in Romania, less than 5 small CHP plants.

Compliance with sustainability criteria for biomass raw material is of course essential. Nevertheless, the sustainability criteria for raw material are less critical in Romania, as the raw material for energy use may come from biomass waste and energy crops on agricultural land that are currently not used (more than 2 million ha).

Table 3 shows the estimated capacity and output for the biomass heat and power plants needed to fulfil the requirements of the 2020 scenario.

Table 3. Estimation of the costs of heat and power plants fuelled by biomass

<b>New plants</b>	<b>Energy output 2020</b>	<b>Number</b>	<b>Unit capacity, MW</b>	<b>Total costs, millions Euro</b>
solid biomass local boilers & DH	478 ktoe	around 130	8...12 MW	500...550
solid biomass CHP	322 ktoe	around 100	1...5 MW power	1,000...1,200
biogas CHP	253 ktoe	150...180	0.7...1.3 MW power	800...850
municipal waste CHP	43 ktoe	6...7	8...15 MW power	200...250

It can be concluded that it will be a very big step to realise the 130 District heating systems, the 100 CHP plants on biomass and almost 180 biogas plants (see Table 3). All efforts should be focused to help the development of this market. These technologies may contribute to approx. 17 % of the RES energy by 2020.

## 4. ACTORS AND ORGANISATIONS

The third report provides a complete overview of all the actors in the Romanian government and biomass market, as well as consultation with Romanian bio-energy experts.

It was concluded that there is a need to set up a government interdepartmental platform (including Economy, Finance, Agriculture, Environment, Regional Development, Research) to develop a government vision and legislation. During the course of the project this interdepartmental platform was established.

The biomass market should also get organised by building a business platform or association for developing projects and undertaking actions. At present, the National Association of Biomass Producers is in place.

For an overview see figure 4.

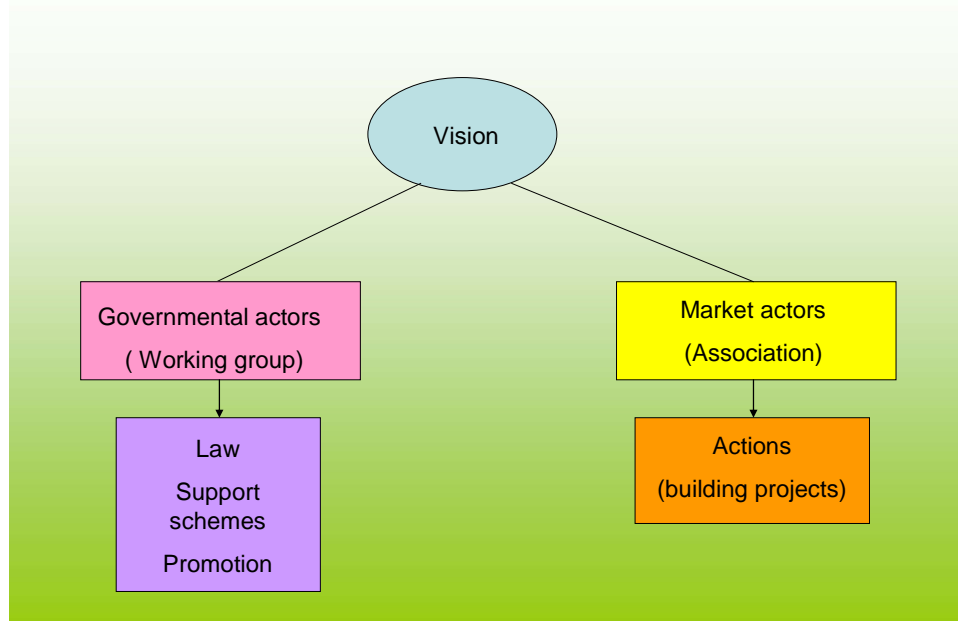


Figure 4. The proposed government and market organization

Active relationships between the members of these two platforms e.g. through regular meetings are important for discussions about policy and recommendations on how best to link policy to action. The most topical action is to develop roadmaps to meet the agreed targets.

Besides the law also support schemes and local and national programmes for promoting the use of energy from renewables sources, must be established.

## 5. HOW TO DEVELOP THE RECOMMENDED CHAINS

### Policy

It is recommended to:

- elaborate the Biomass Action Plan, in correlation with the National Renewable Energy Action Plan (NREAP), with considerable involvement of decisional bodies, experts, local authorities and other stakeholders.<sup>3</sup>
- split NREAP into Regional Action Plans.
- promote energy efficiency and energy saving throughout society. The forecast of gross final energy consumption must be linked to the evolution of energy efficiency as an increase of energy efficiency in the household sector by improving the efficiency of the heating system will lead to a reduction in gross final energy consumption at the sector and the national level.
- work with the European Commission to assess the value of efficient heating using biomass (versus the fact that in Romania, replacing the inefficient use of biomass for heating will actually lead to a reduction in the overall contribution of biomass).

### Developing the heat market

It is recommended to:

- elaborate and implement a national strategy for cogeneration, with a particular focus on biomass cogeneration.
- improve the existing programme “Termoficare 2006-2015, caldura si confort” (“District heating 2006-2015, heat and comfort”) by adding specific provisions for promoting biomass-based district heating. The success of biomass for heating and/or the success of biomass in combined heat and power will depend on the success of the district heating markets that constitute the indispensable link between larger-scale production facilities and a larger number of customers.
- involve local authorities, local businesses and local communities in order to find appropriate local solutions, including the best way to collect fuels; after all, biomass is a ‘local fuel’.

### Organisation

It is recommended to:

- maintain a governmental interdepartmental platform (including Economy, Finance, Agriculture, Environment, Regional Development, Research) to develop legislation and government vision.<sup>4</sup>
- monitor the implementation of the NREAP
- identify and monitor the implementation of effective support schemes.
- build a business platform for projects and engage in their active development.<sup>5</sup>
- establish an active relationship between members of the two platforms, for holding regular meetings on policy matters and providing recommendations on

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<sup>3</sup> During the course of the G2G project the NREAP was elaborated under an interministerial working group and will be submitted for public debate. The biomass part is based upon the results of the project on the Biomass Master Plan for Romania.

<sup>4</sup> idem

<sup>5</sup> The National Association of Biomass Producers can be developed into a business platform, if it is given more visibility as counter part to the government body.

how to link policy to action. The most topical action is to develop the Roadmaps to achieve the agreed targets.

- establish a government body to start identifying joint projects under the RES Directive, flexible mechanisms and negotiate the Romanian share within these projects. According to the Romanian forecast document, Romania is already taking into consideration joint projects under the RES Directive, such as hydroelectric projects with Bulgaria.

## **Financing**

It is recommended to:

- put into force the amended Law no. 220, providing 3 Green Certificates for 1 MWh of electricity generated from biomass. Also fixing a wider horizon - at least up to 2020 - for the RES support mechanism.
- give priority to biomass projects that are co-financed by the Structural Funds and Environment Fund programmes. Within the first call of SOP-IEC Axis 4, only 3 projects based on biomass CHP (total output: 5.24 MW) were selected to be co-financed with 13.75 million Euro, from a total 123 million Euro granted for renewable energy projects. Currently 2 projects are being co-financed by the Environment Fund.
- make research funds for biomass energy available, mainly to update the biomass potential and identify specific Romanian conditions and technological issues.
- encourage the replacement of inefficient old biomass heating systems. The CASA VERDE programme of the Ministry of Environment and Forestry promotes heating by biomass with modern boilers in new residential and public buildings, or switching to heating systems using other sources (gas and fossil fuel-based district heating) to biomass.
- introduce a capital subsidy for residential heating to switch from gas-fuelled boiler units to efficient biomass-fuelled units.
- introduce a support mechanism for local authorities to develop district heating systems based on biomass, similar to existing systems for electricity based on RES. This could be a capital subsidy for district heating systems fuelled by biomass or/and a regulated higher heat tariff introduced by the Regulatory bodies ANRE and ANRSC.

## **Sustainability**

It is recommended to:

- carry out studies and create scenarios to evaluate the economic impact, environmental impact and the sustainability for biomass resources of the biomass promotion policy, in the short, medium and long term.
- draft legislation for implementing sustainability criteria for biofuels and bioliquids
- introduce a program to encourage the use of unused arable/degraded land for energy crops and provide incentives for energy crop producers
- introduce a regulatory framework for improving forest management in order to increase the amount of bio-energy generated from existing forests.

## **Monitoring and information**

It is recommended to:

- monitor installations co-financed by public funds and collect information about their operation, and start demonstrative projects, in order to replicate the best practices
- establish detailed monitoring procedures

- develop a more reliable statistic methodology to assess the biomass rural consumption
- prepare dimensioning and developing guides and feasibility studies for standard biomass projects, on 2-3 typical capacity sizes, which are freely distributed and periodically improved based on operational experience with the demo projects
- prepare a special guide for local authorities with an inventory of possible biomass project locations and economics. Many investors have indicated that funding is ready and available for fully-developed biomass energy projects. Their main problem is finding project concepts and developed projects in which to invest
- encourage visits to demonstration projects
- design training courses for professionals and installers
- create campaigns to promote local and residential biomass heating
- encourage the adoption of European standards for RES technologies that incorporate specific Romanian norms