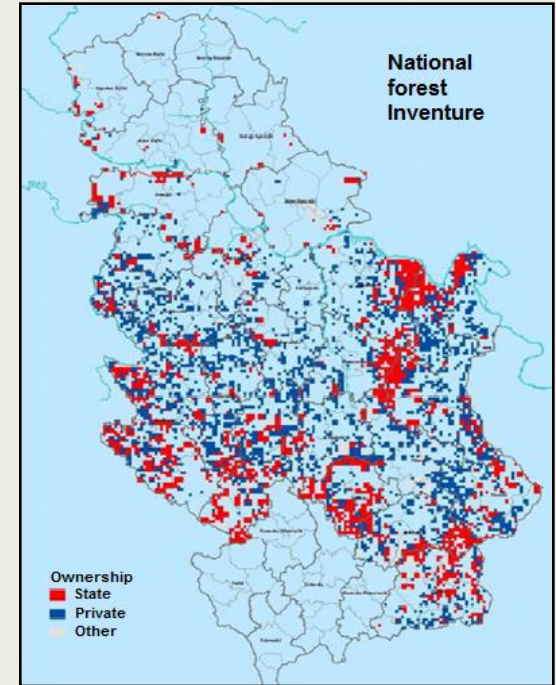
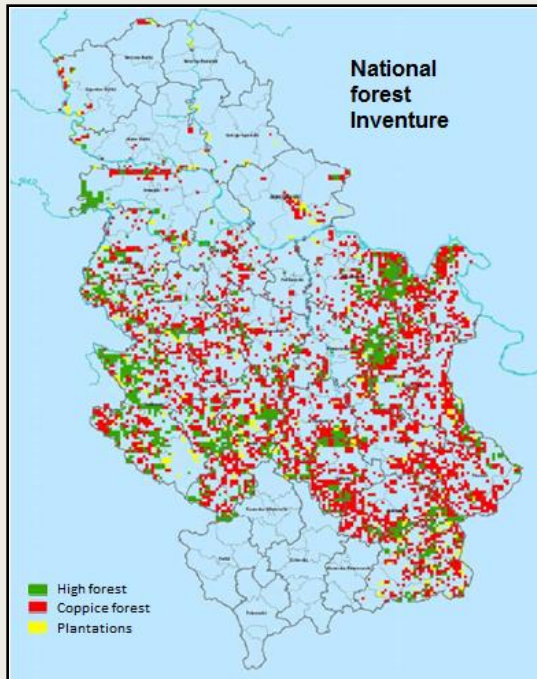


Serbian Coppice Forest Biomass for Energy Purposes Investment Opportunities

Belgrade, Serbia, February 2013.

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Availability of Feedstock According to Serbian Forest Inventory Report from 2011



Forest Type	Forest area		Standing volume			Annual increment			
	ha	%	m3	%	m3/ha	m3	%	m3/h a	piv
High forest	621,200	27.6	157,511,262	44	253.6	3,387,959	37	5.5	2.2
Coppice forest	1,456,400	64.6	181,188,914	50	124.4	4,458,193	49	3.1	2.5
Plantages	174,800	7.8	23,787,240	6.5	136.1	1,233,621	14	7.1	5.2
Total	2,252,400	100	362,487,416	100	160.9	9,079,773	100	4	2.5

Coppice Forest Ownership Structure	Forest area		Standing volume		Annual increment		
	ha	m3	m3/ha	m3	m3/h a	piv	
State	616,000	84,001,965	136	1,918,476	3	2.3	
Private	840,400	97,186,948	115	2,539,717	3	2.6	
Total	1,456,400	181,188,913	126	4,458,193	3	2.45	

Coppice Forest Feedstock – Key Points

- The total amount of wood in coppice forests in Serbia is 181 million m³, out of which:
 - State-owned are 84,001,965 m³
 - Privately owned are 97,186,948 m³
- Coppice forest trees (usual diameter size per tree is around 30-50 cm) do not have the quality for industrial use, and are therefore extremely suitable for use in the field of energy production. Coppice forest trees are mostly beech and other type of hard wood trees.
- Not taking into account the logistic constraints, it would be possible to extract the annual amount of 4,458,193 m³ of wood from the coppice forest, out of which:
 - State owned are 1,918,476 m³
 - Private owned are 2,539,717 m³

Business Focus and Strategy in Serbia

- Focus on establishing secure and long term supply chain of forest biomass feedstock (from 400 K m³ up to 4 M m³ annually) and its use in combination with commercially mature forest biomass technologies,
- Identifying opportunities and possibilities for investments in forest biomass renewable energy sector,

Business Focus and Strategy

Business



Focus and Strategy

<p>Implementation of modern methodology and optimized productivity for extraction of forest biomass and its processing into standard quality wood chips for domestic use in production of wood pellets, biodiesel, heating and electricity.</p>	<p>Development of investment projects and technical documentation for building of new factories for production of wood pellets. Support and development of projects for domestic use of wood pellets in households, public institutions, hotels and export in the region and the EU.</p>	<p>Development of investment projects and technical documentation for building new heating and CHP plants based on feed-in tariffs. In a large number of local communities the district heating plants have not been refurbished, while in the educational, medical, and public institutions heating systems are based on outdated heating plants burning hard oil.</p>	<p>Development of investment projects and technical documentation for building pyrolytic refineries for biodiesel production for domestic market and export.</p>	<p>Development and production of ecological wood houses for domestic market and export.</p>
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BES Business Focus - Projects Pipeline in Serbia

- Possibilities for development of 13 forest biomass centers for exploitation of 4 million tones of biomass from coppice forests,
- Possibilities for take over of 3 existing wood pellets plants with around 90,000 t/year production capacity,
- Possibilities for development of 5 brownfield locations with complete infrastructure suitable for pellet plants,
- Possibilities to build CHP in 25 different cities around the Serbia by the year 2018 with the projected installed capacity of 660 MW,
- Project with foreign technology provider and partner for building capacities for production of high technology boilers which are suitable for use of biomass with 60% of moisture content,
- Projects for production of biofuel in partnership with local and foreign partners,
- Project for production of energy efficient wood houses through transfer of know-how and technology with the partner.

Projected Wood Chips Production and Consumption Balance

	2013	2014	2015	2016	2017
			<i>t of wood chips</i>		
Total Production	300.000	600.000	1.000.000	1.500.000	2.000.000
Use for CHP	106.667	266.667	426.667	586.667	746.667
Use for Pellet Production	80.000	160.000	340.000	520.000	700.000
Use for Biofuel	40.000	120.000	200.000	280.000	420.000
Export	73.333	53.333	33.333	113.333	133.333

Up to year 2018 it is possible to increase the annual production amount to 4 million m³ through optimization of forest management system in the state owned forests, and use of private owned forests for the feedstock supply.

Business Development Structure

Indirectly Dependent

Boiler
Producers

CHP
Equipment
Producers

Pellet
Stove
Producers

Directly Dependent

CHP

Wood Chip Production
and Supply:

Cutting

Chipping

Transporting

Biofuel
Production

Production
of Wood
Pellets

Wood
House
Production

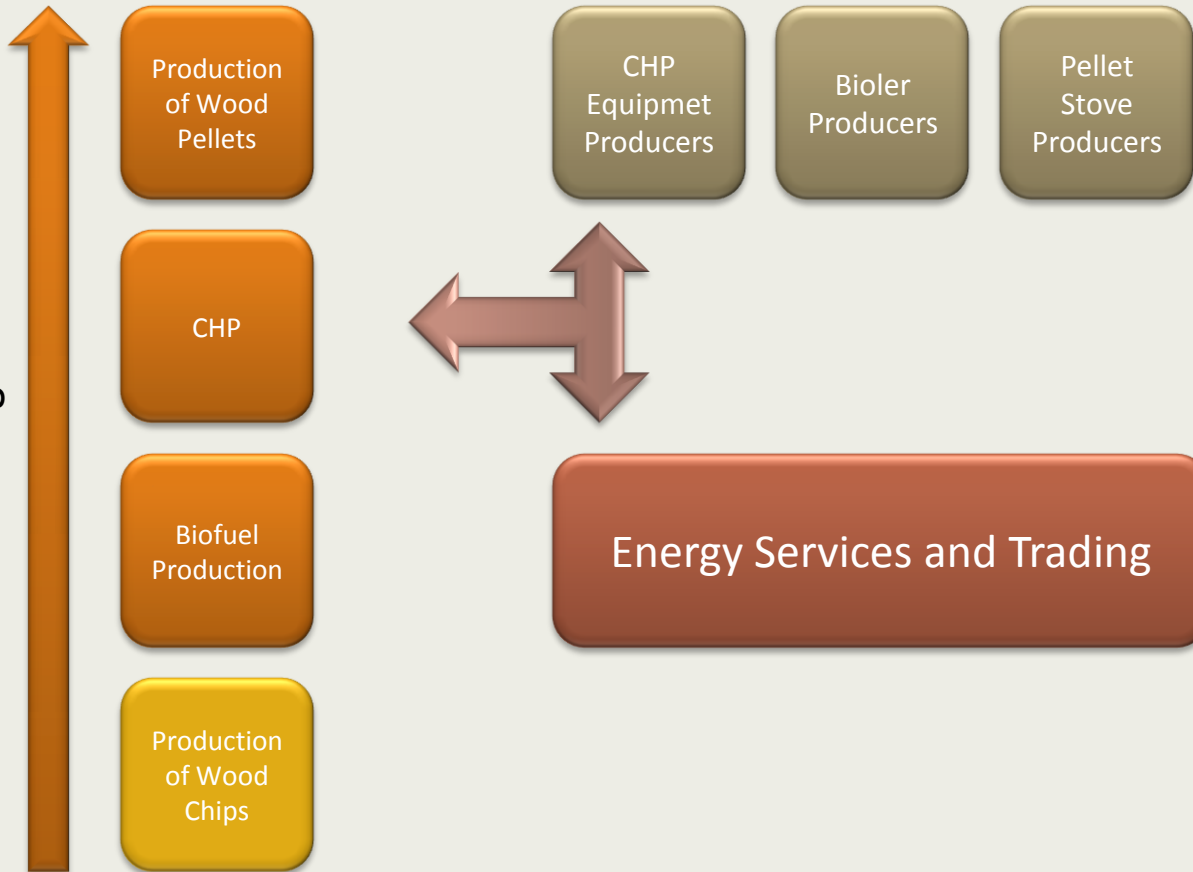
Energy services and trading: wood pellet and wood chips delivery, retail for selling small boilers, pellet stoves and solid wood fuels

Business Development Structure

Directly Dependent

Indirectly Dependent

Vertical Integration



Proposed Company Structure

