



Woody biomass market in Serbia: present state and future trends

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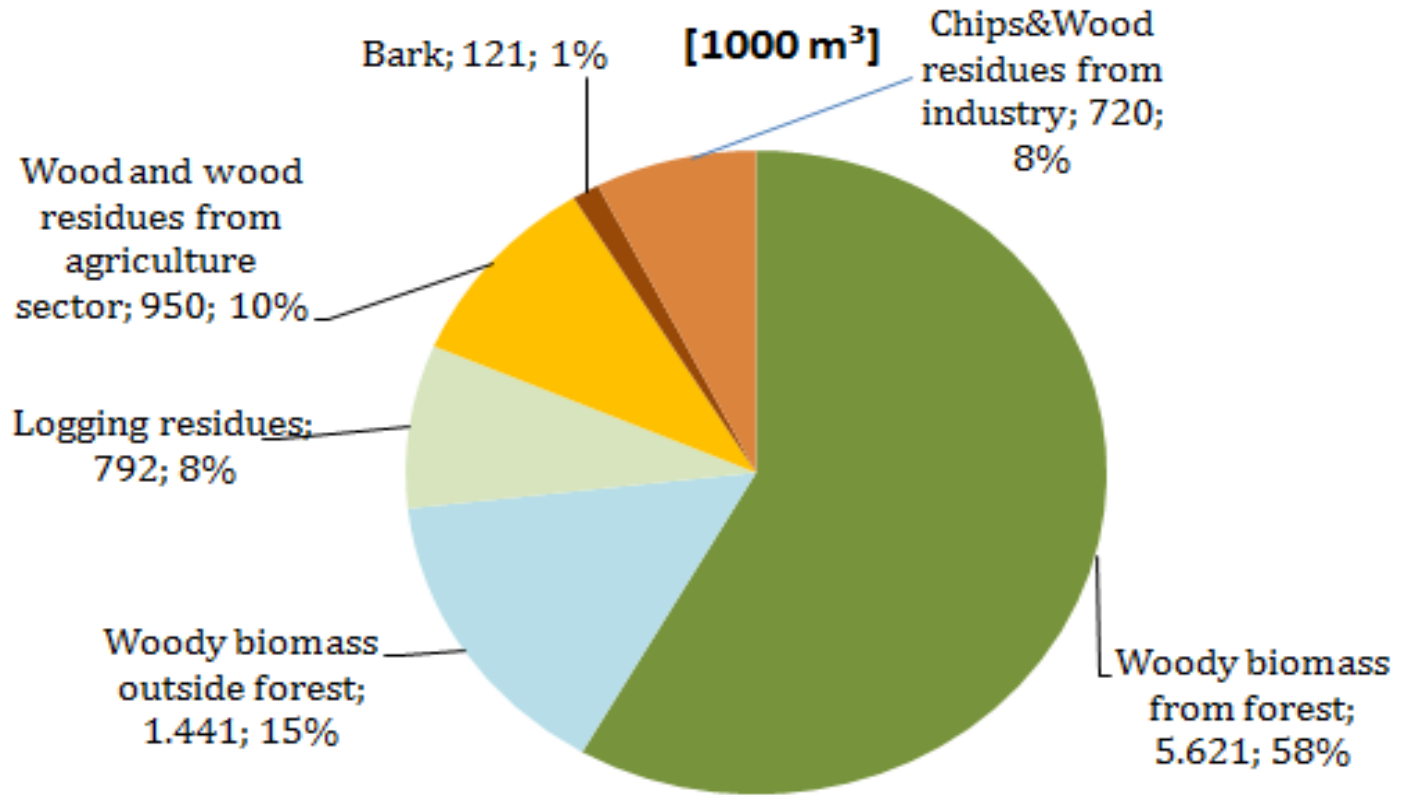
- » The potentialities and supply sources for sustainable biomass production and use in Serbia
- » Areas for woody biomass use in Serbia
- » Current situation regarding energy consumption in Serbia
- » Wood pellets market in Serbia



THE POTENTIALITIES OF WOODY BIOMASS FOR ENERGY USE IN SERBIA



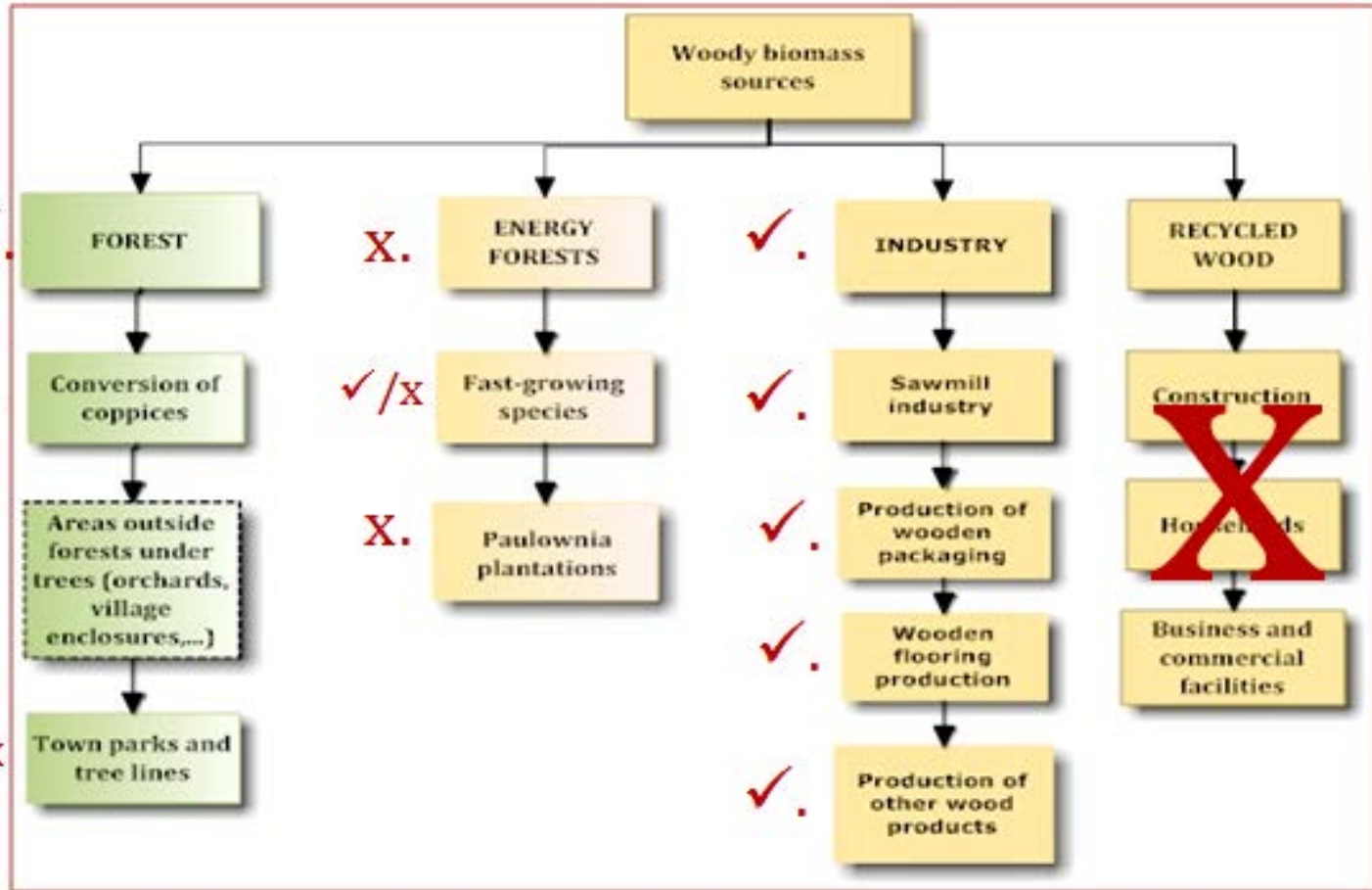
Total: 9.64 million m³



Source: [Pisek R and N. Markovic](#)

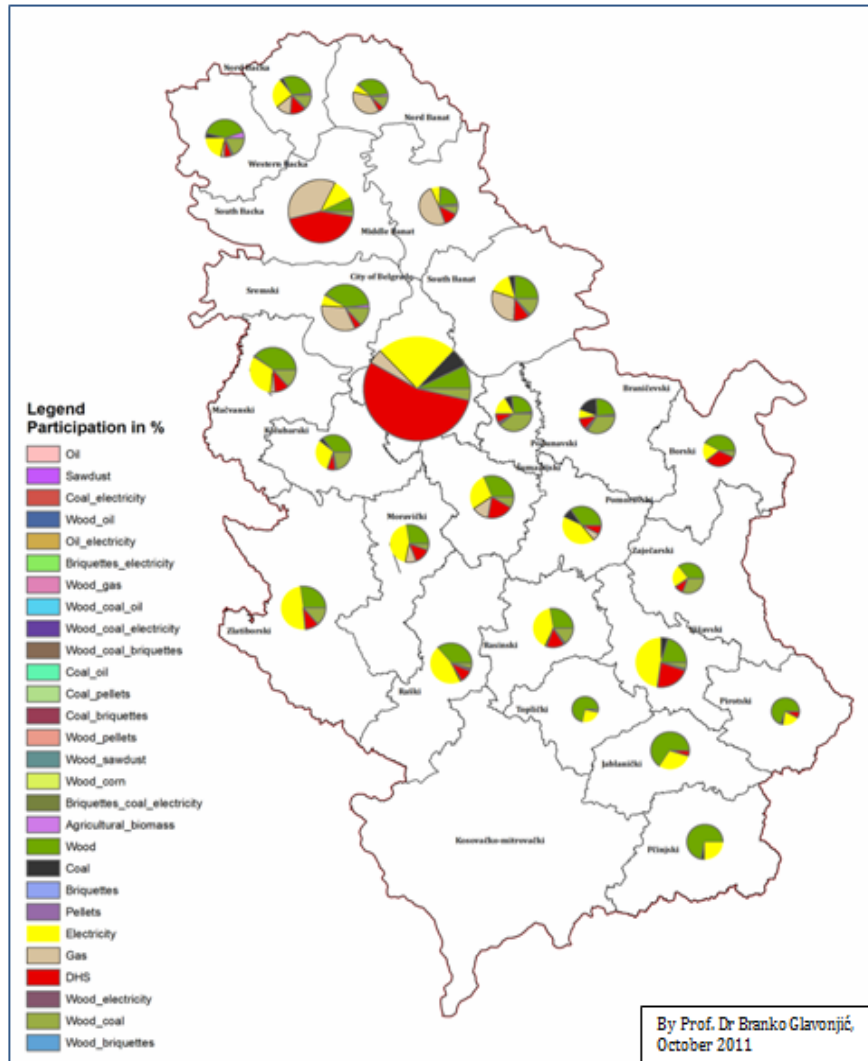


SUPPLY SOURCES FOR SUSTAINABLE BIOMASS PRODUCTION IN SERBIA





AREAS FOR WOODY BIOMASS USE IN SERBIA: 1. Households

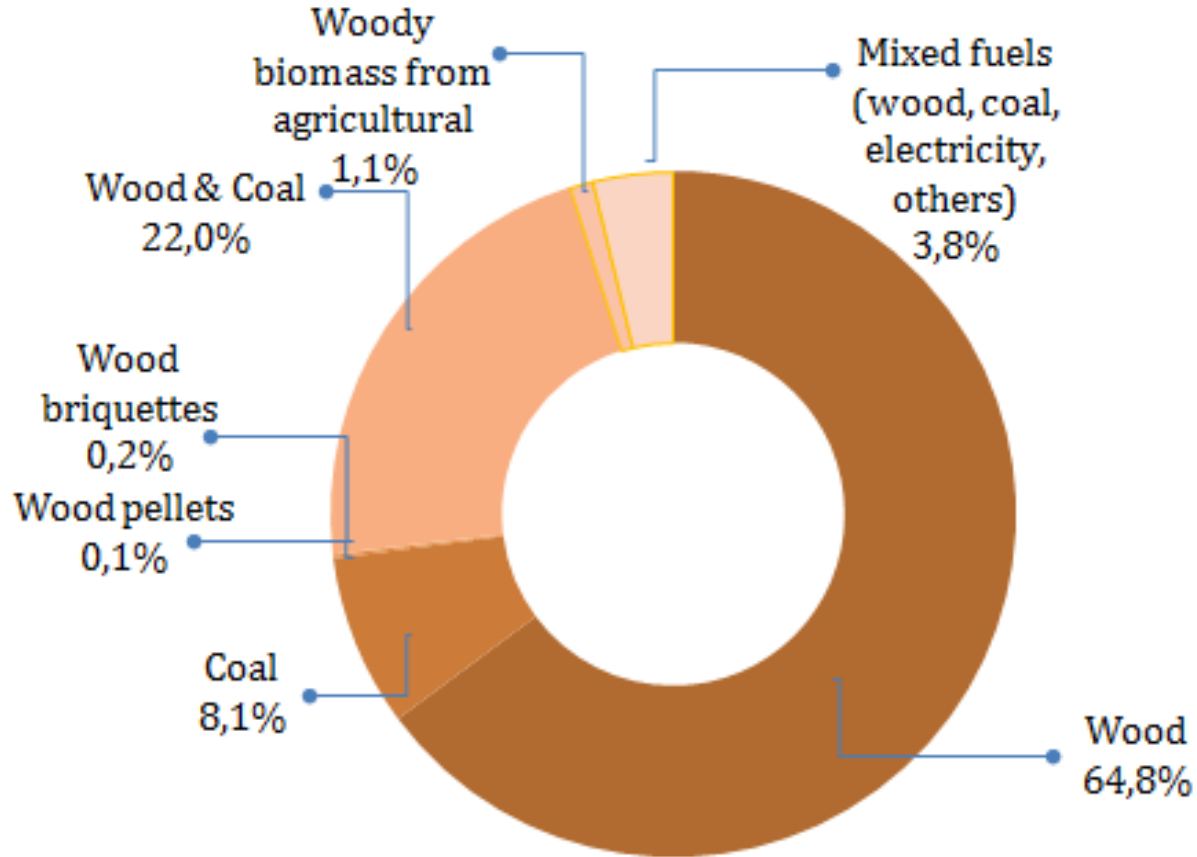


- » 1.03 million households
- » Fuelwood: 6.360.788 m³
- » Wood residue from industry= 55.905 m³
- » Wood pellets= 63.722 tonnes
- » Wood briquettes= 15.189 tonnes
- » In Southern, Eastern and Western counties wood fuels present in over 70% of households



The participation of some types of solid fuels in households consumption in Serbia

» Households(40,9%) = 1.031.168





AREAS FOR WOODY BIOMASS USE IN SERBIA

2. Woody biomass for other biofuels

2010: 382.3 thousand m³

2013: 644.2 thousand m³

10%



11%



16%

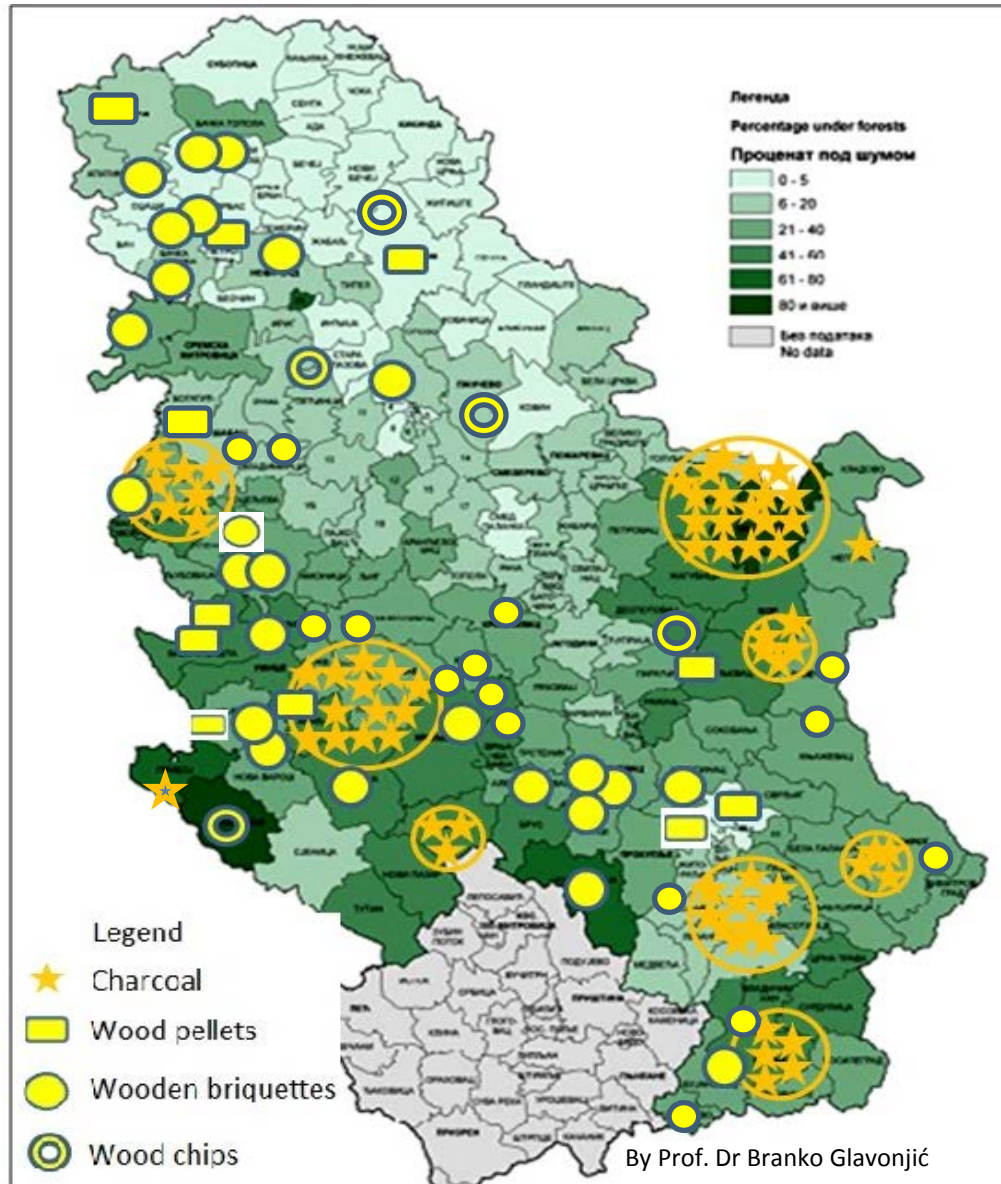


63%





Map of wood fuels producers in Serbia





AREAS FOR WOODY BIOMASS USE IN SERBIA

3. Woody biomass for other purposes





Woody biomass consumption for wood based panel production





Woody biomass consumption for wood based panel production

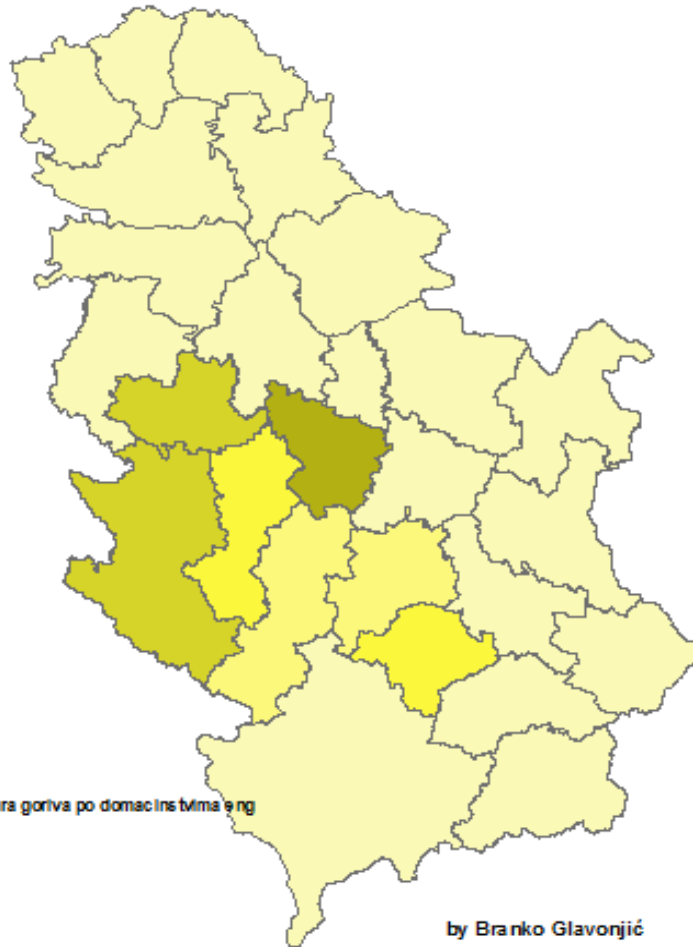


- » Firewood
- » Long meter roundwood
- » Solid residues from sawmills
- » Sawdust
- » Wood chips





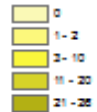
The map of the woody biomass consumption for lime production in Serbia



Legend

Okružni struktura goriva po domaćinstvima eng

Bio_kreosna



by Branko Glavonjić

» 81 lime-kilns

» Annual consumption of woody biomass= 10.000-12.000 m³



Lime-kiln in Serbia





Fuelwood consumption for heating facilities of the Serbian Church

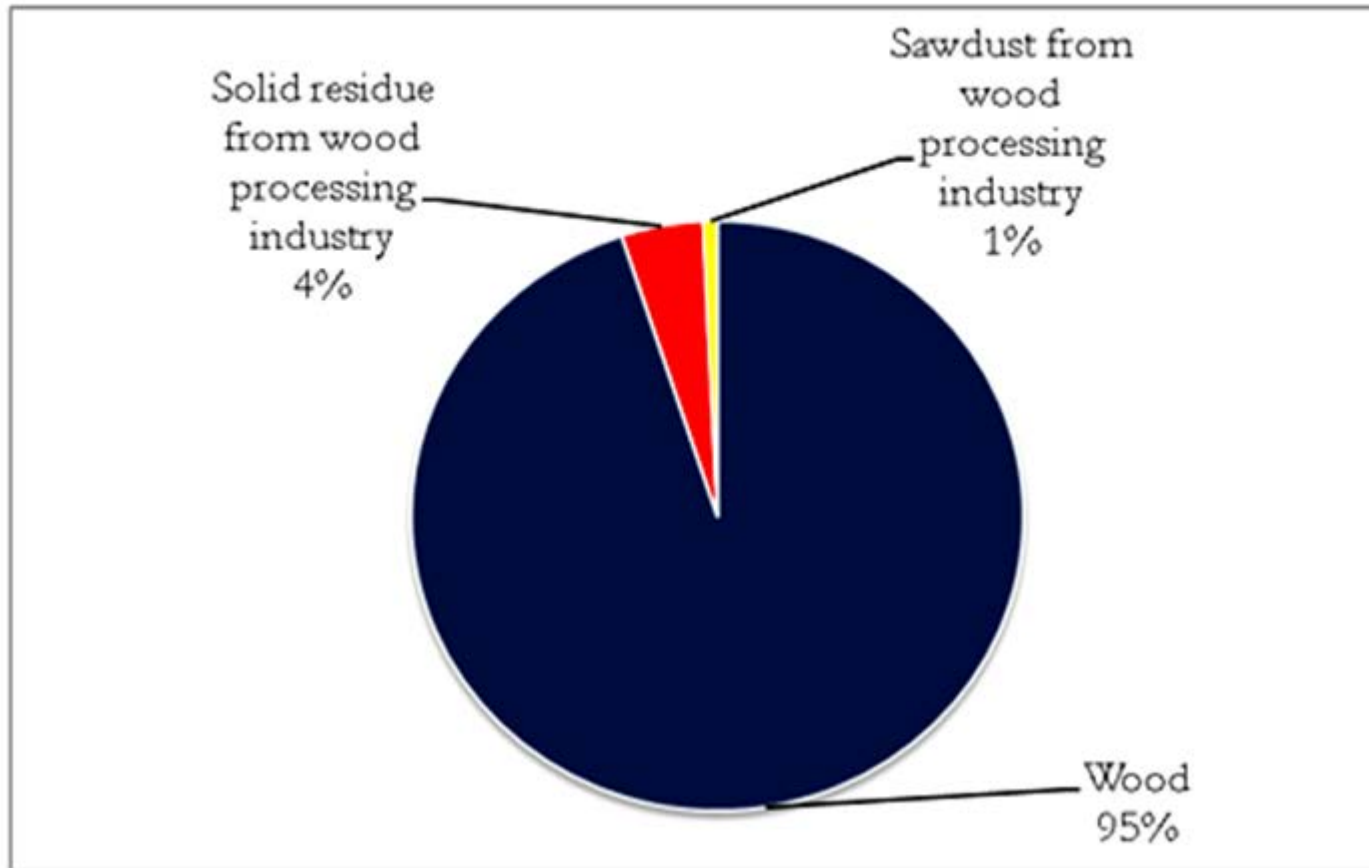


Firewood for needs of Mileseva monastery, Photo: B. Glavonjić, , September 2011.



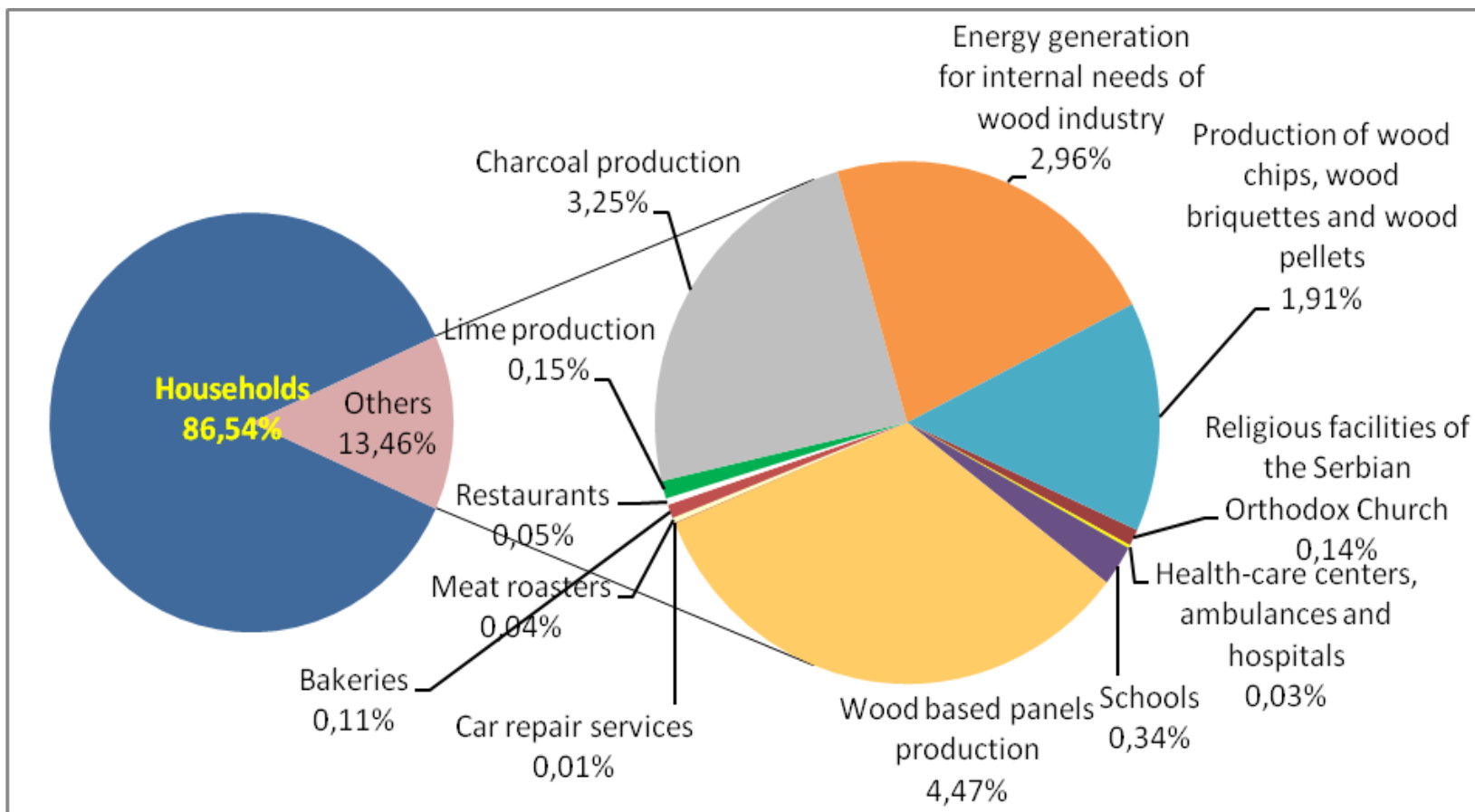
WOODY BIOMASS: TOTAL CONSUMPTION IN SERBIA

Total consumption: 7.4 million m³





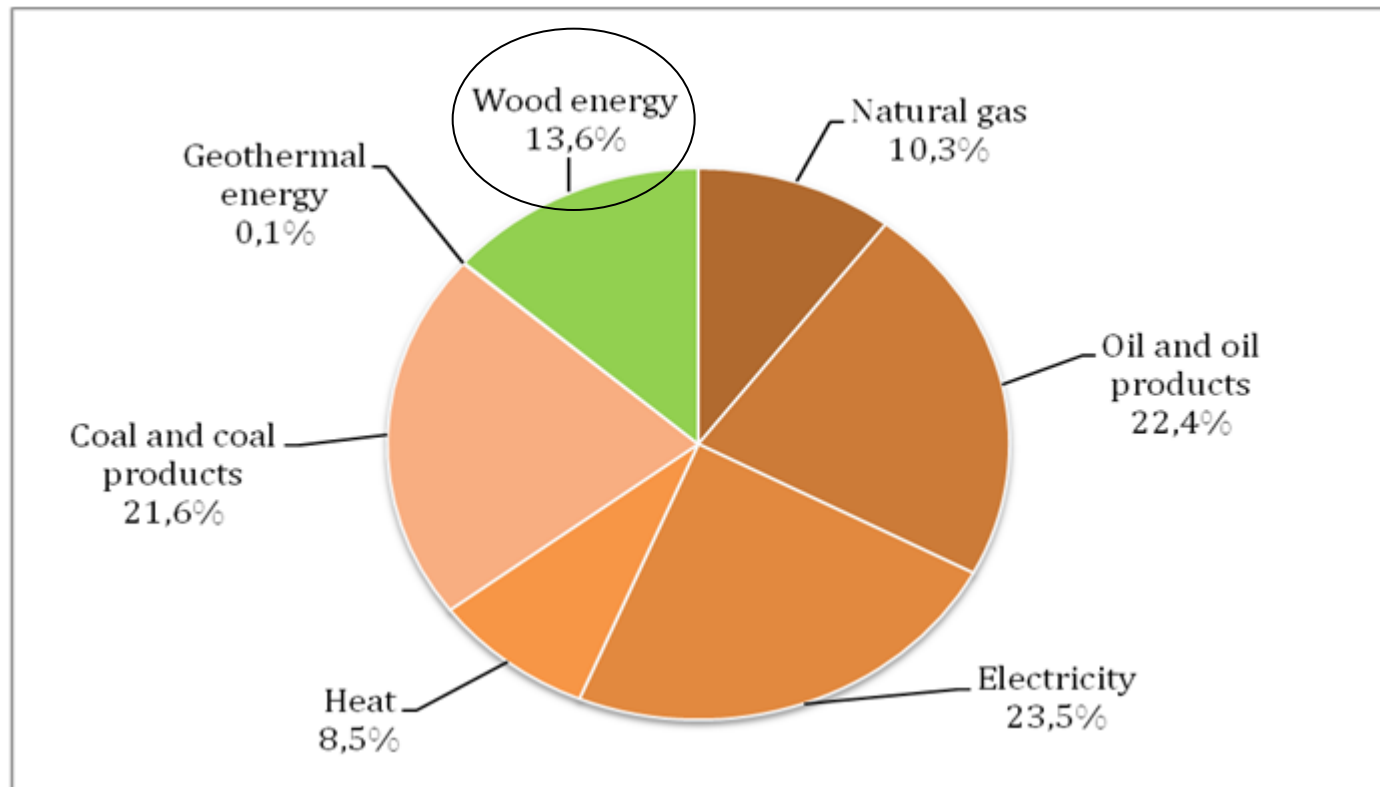
WOODY BIOMASS: TOTAL CONSUMPTION PER CONSUMERS





CURRENT SITUATION REGARDING ENERGY CONSUMPTION IN SERBIA

Participation of certain fuel types in total final consumption of energy for energy purposes in Serbia in 2013





Wood pellets in Serbia: short overview



» 37 pellets plants



» Installed capacities at the end of 2013: 489,000 tonnes



» Production in 2013: 165,802 tonnes



» Ratio production/installed capacities: (33.9%)



» Average % of utilization of capacities in big pellets plant: 50-60%



» Average % of utilization of capacities in small pellets plant: 15-30%



» Consumption of raw material: 335,018 m³





Wood pellets in Serbia: short overview

» The biggest new pellets plant under construction: 100.000 tonnes/annually





Wood pellets in Serbia: short overview

» ...additional pellets plant: 12.000 tons/year





Wood pellets: types of raw materials



» Long-meter roundwood



» 1 meter firewood



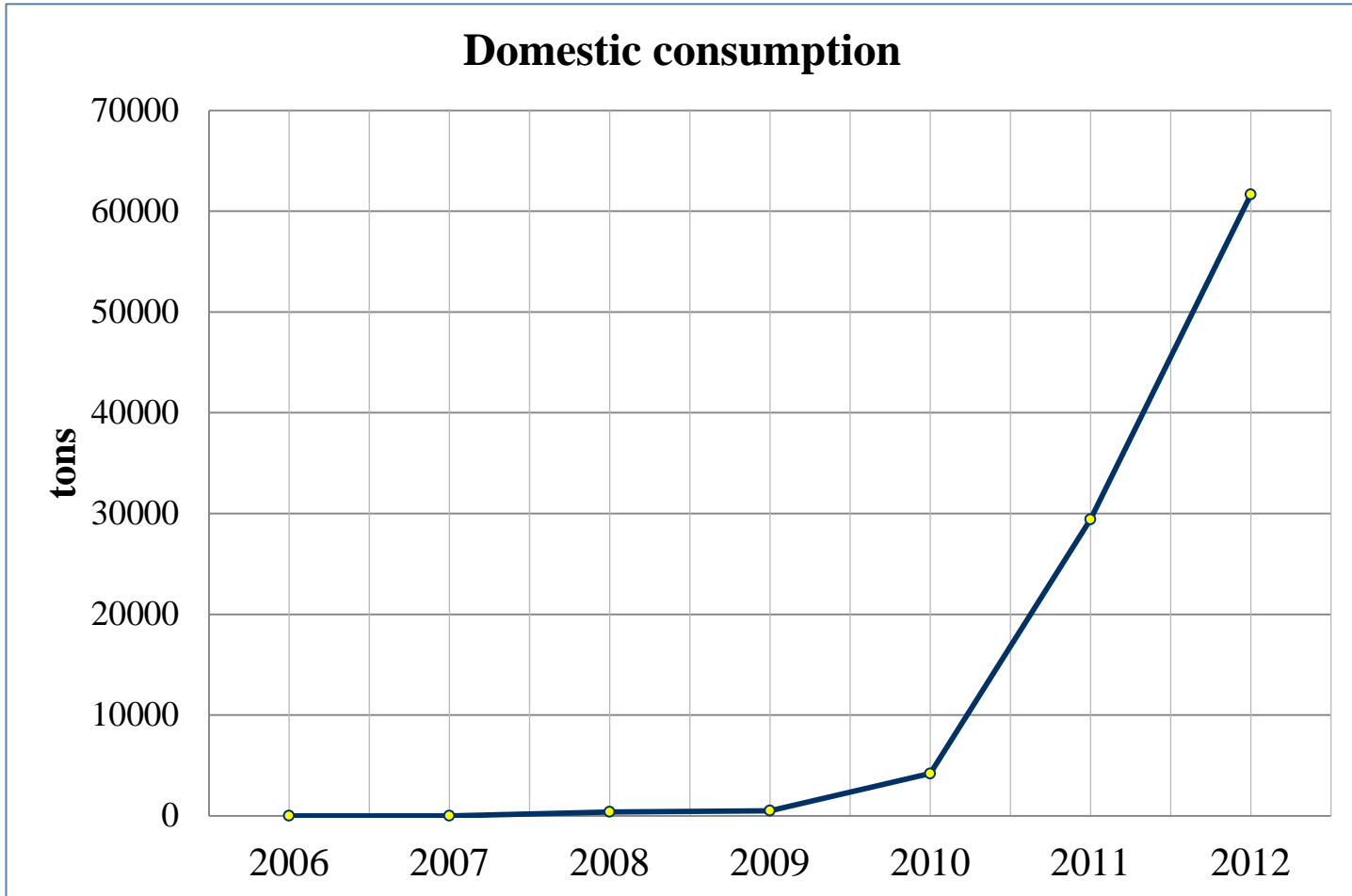
» Slabs

» Saw dust





Wood pellets: domestic consumption





Wood pellets: consumption in touristic settlements





Wood pellets: consumption in district heating systems



Foto: Savić R.



Wood pellets: Prices



EXW pellets plant

PVC 15 kg

» 2007: 105 €/tons

» 2013: 195 €/tons



big bags (1tons)



2013: 188 €/tons

Fuels trade centers

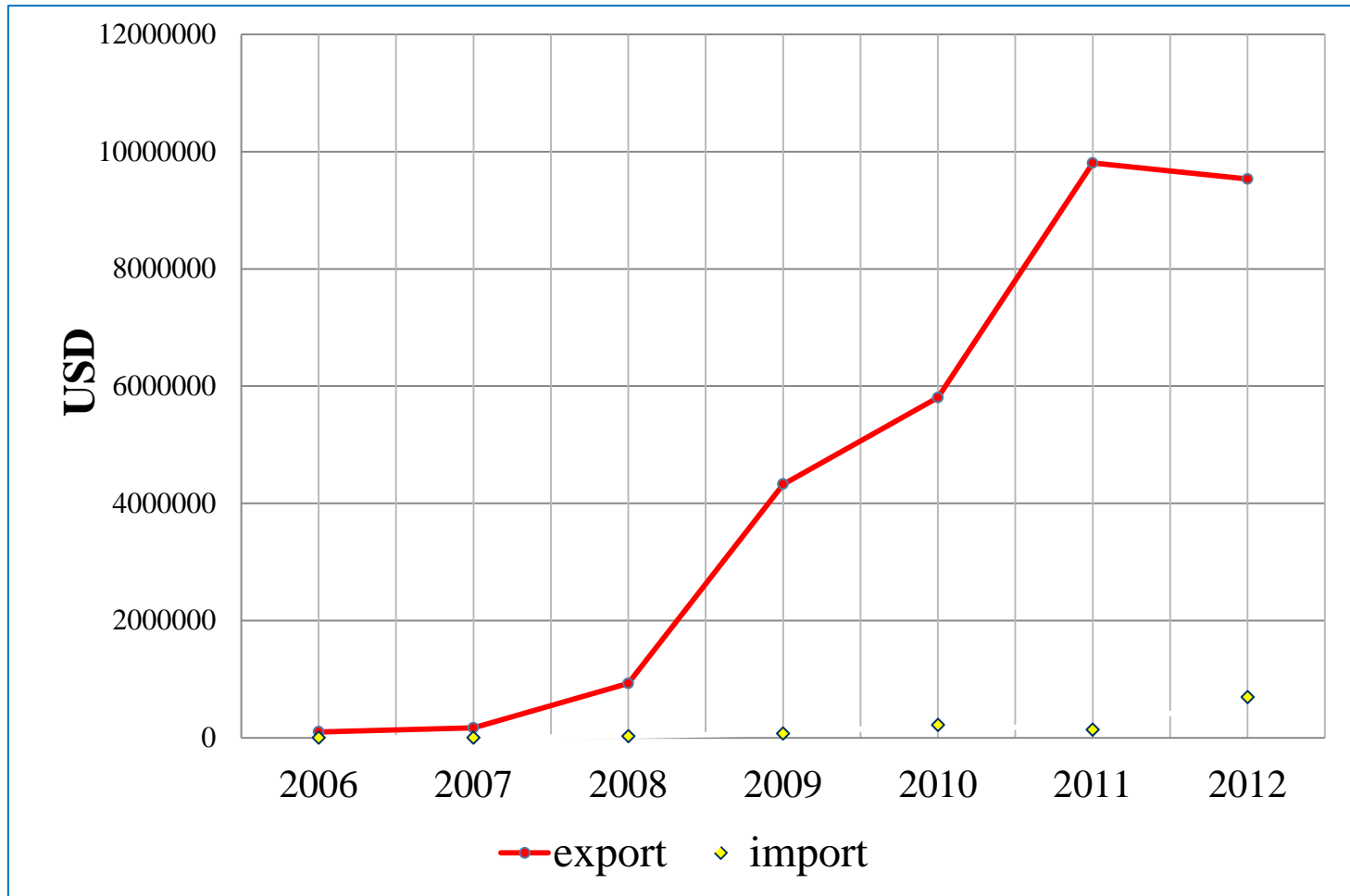
PVC 15 kg

» 2013: 210-215 €/tons

December, 2013

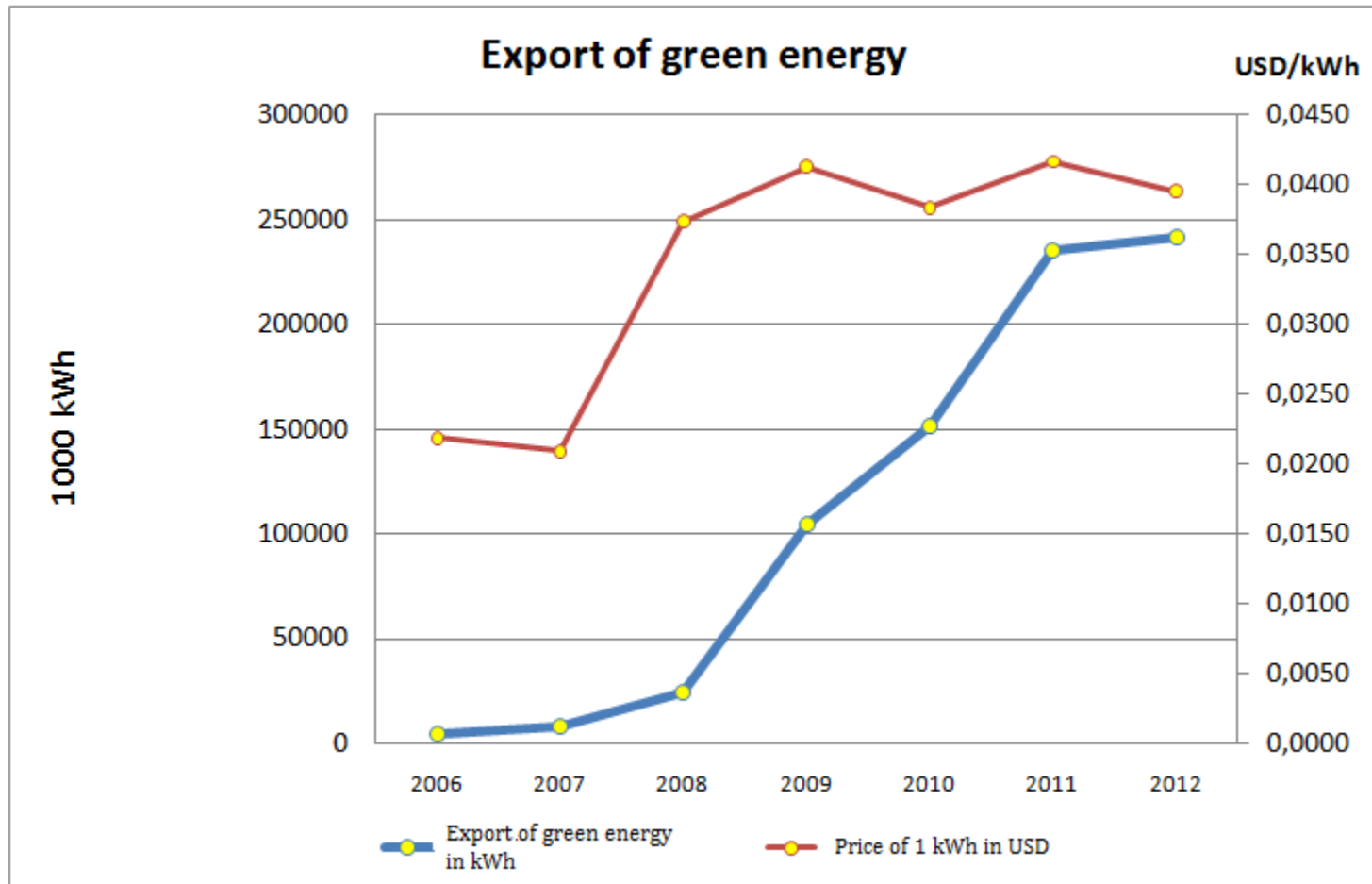


Wood pellets: Export/Import





Wood pellets: Export of green energy

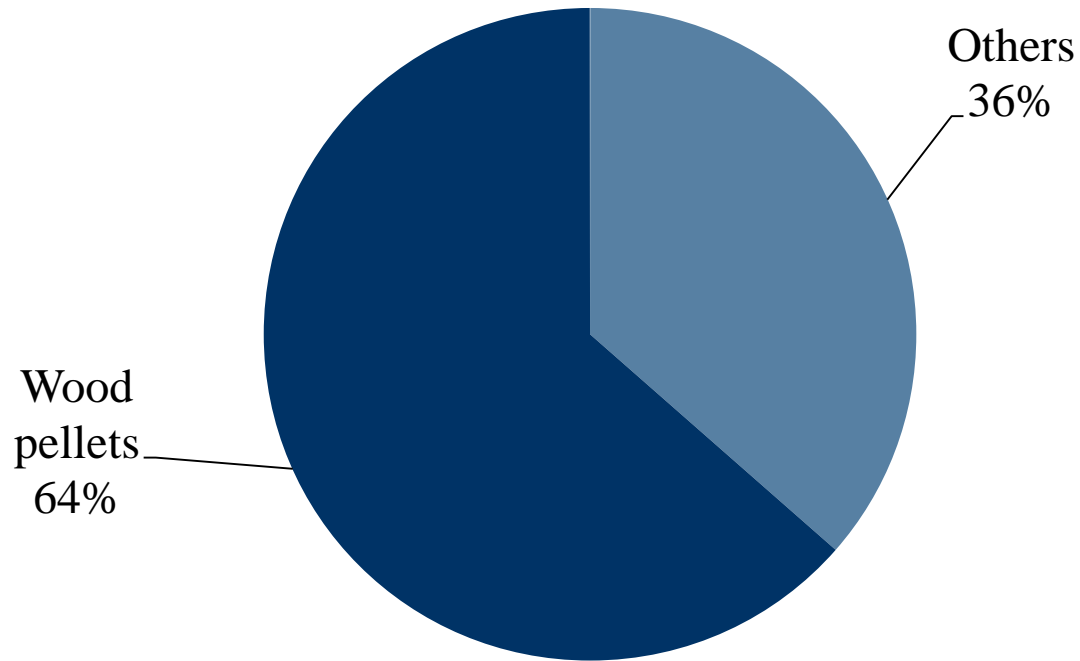




Wood pellets: participation in total wood fuels export



2012.



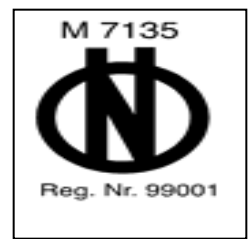


Wood pellets: Main export destinations





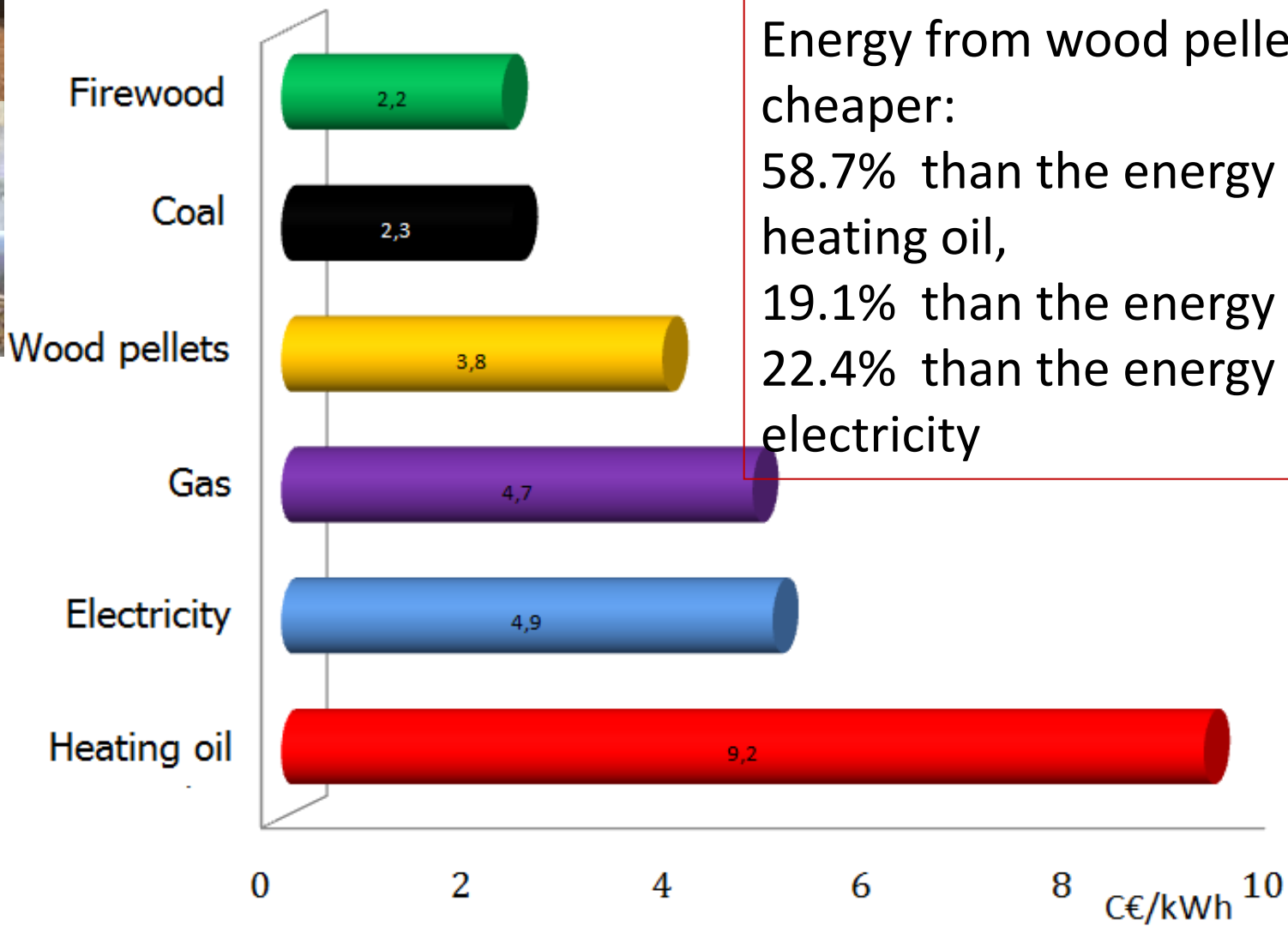
Wood pellets: quality



PARAMETER PARAMETER PARAMETRO	MASS EINHEIT MEASURING UNIT UNITÀ DI MISURA	WERT VALUE VALORE
DURCHMESSER DIAMETER DIAMETRO	MM	8,0
LÄNGE LENGTH LUNGHEZZA	MM	20,0 +/- 5,0
FEUCHTIGKEIT HUMIDITY UMIDITÀ	%	8,0 (+/- 0,5)
ASCHGEGHALT ASH CONTENT CONTENUTO CENERI	%	0,6
ABRASION ABRASION ABRAZIONE	%	1,8
BINDEMITTEL BINDING AGENTS AGENTI LEGANTI	%	KEINE ABSENT ASSENTI
DICHTE DENSITY DENSITÀ	KG/M3	650 +/- 720
BRENNWERT CALORIFIC VALUE POTERE CALORIFICO	kJ/kg	18,6 (+/- 0,5)
FORMALDEHYD FORMALDEHYDE FORMALDEIDE	CH2O	KEIN ABSENT ASSENTE
RADIOAKTIVE STRAHLUNG RADIOACTIVITY RADIOATTIVITÀ	Sv	KEINE NICHE ASSENTE
SCHWERMETALLE HEAVY METAL RESIDUES METALLI PESANTI	mg/kg	UNTER LIMIT UNDER LIMIT SOTTO LIMITI
CHLOR CHLORINE CLORO	%	0,032 (+/- 0,02)
SCHWEFEL SULFUR ZOLFO	%	0,011 (+/- 0,04)
STICKSTOFF NITRATE AZOTO	%	0,081 (+/- 0,3)



Wood pellets: competitiveness



Energy from wood pellets is cheaper:
58.7% than the energy from heating oil,
19.1% than the energy from gas
22.4% than the energy from electricity



Contribution of wood pellets to national economy and environmental protection



- » The consumption of wood pellets in 2013 substituted the import and consumption of heating oil in the value of 15.1. million EUR or the import and consumption of gas in the value of 21.2 million EUR.
- » The consumption of wood pellets in 2013 in Serbia instead of the consumption of heating oil contributed to reduction of CO₂ emissions in the amount of 86,000 tonnes



Main limitations and outlooks of wood pellets

Market development in Serbia



- » The lack of subsidies for wood pellets utilisation in households and by other consumers. Therefore, huge quantities of wood pellets are exported.
- » Differences in the VAT rate for different types of fuels : coal 10%, wood pellets 20%
- » The lack of regulations related to the wood pellets delivery on domestic market (certificates)



Contact details

Thank you for your attention.



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