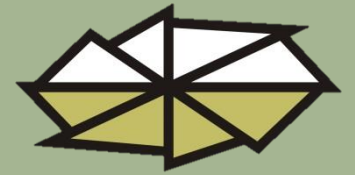


NEW OPPORTUNITIES ON THE MARKET WITH WOOD CHIPS IN CENTRAL SLOVAKIA



TECHNICAL
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in
ZVOLEN

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INTRODUCTION

- Rise of biofuel usage due to the need to increase the energy security
- Pledge to decrease greenhouse gasses emissions
- Goal to achieve 20% share of renewables on total energy production

INTRODUCTION

- Wood chips – the most used biofuel in heat and power production
- Logging residues or low quality timber used to produce wood chips
- Increasing the share of bioenergy = positive effect on local economy as well as energy security

SITUATION IN SLOVAKIA

- Share of bioenergy continually increases

Item	2010	2015	2020	2025	2030
	[TJ]	[TJ]	[TJ]	[TJ]	[TJ]
Biomass	31 000	48 000	66 000	85 000	120 000
Solar energy	300	1 000	6 000	14 000	20 000
Geothermal energy	200	1 000	3 000	4 500	7 000
Hydro energy	18 000	20 000	22 000	23 000	24 000
Wind energy	300	x	x	x	x
Energy waste	200	x	x	x	x
Total	50 000	70 000	97 000	126 500	171 000
Share of renewables [%]	6.4	9.0	12.0	16.0	21.0

SITUATION IN SLOVAKIA

- Biofuels: ideal substitute for natural gas in regions with insufficiently developed energy infrastructure
- Increase can be seen in all regions
- Largest consumers of wood chips are energy producers

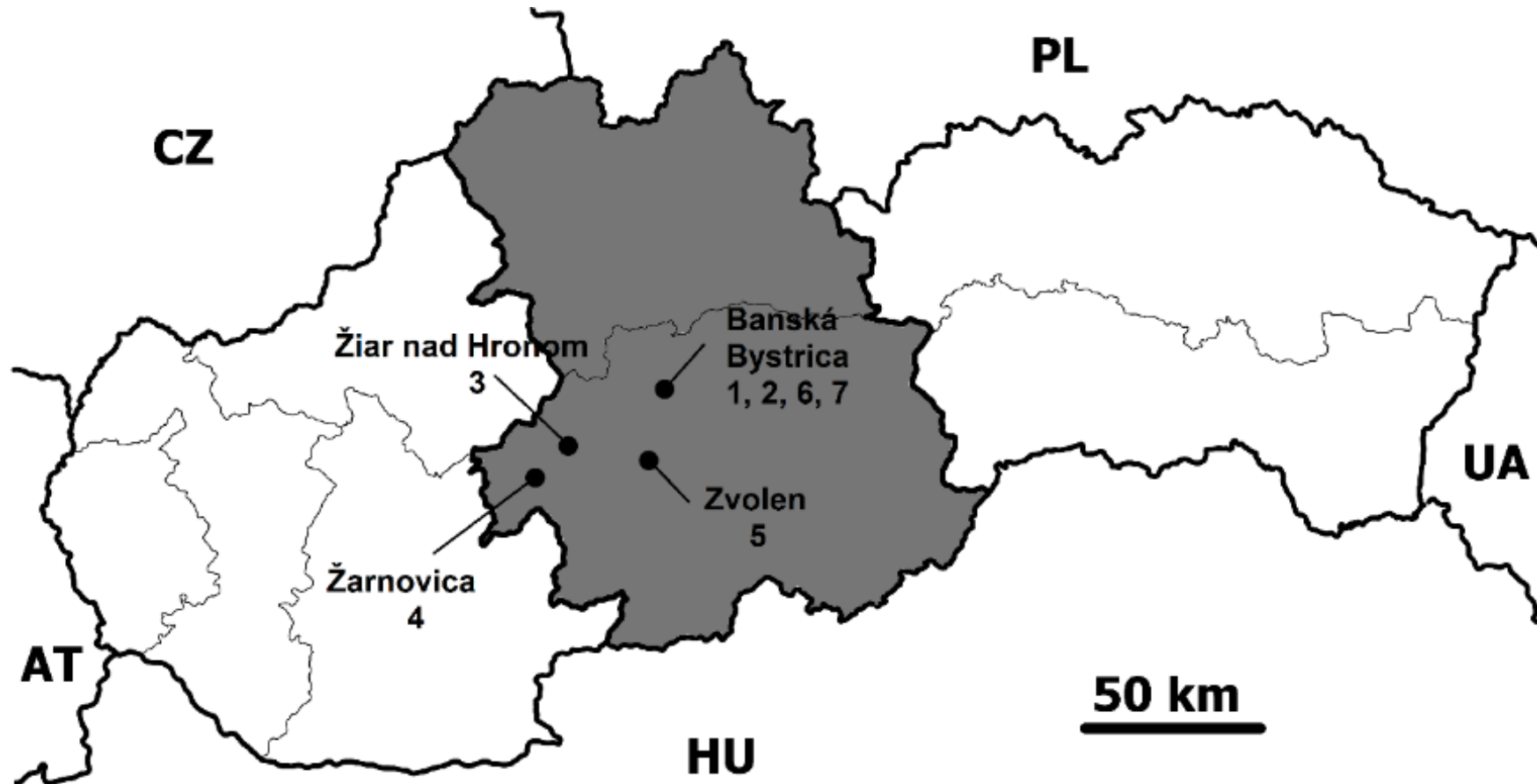
CENTRAL SLOVAKIA

- Already a high share of energy produced from biofuels
- Predicted further increase

**How high will be the actual demand
for wood chips?**

RESULTS

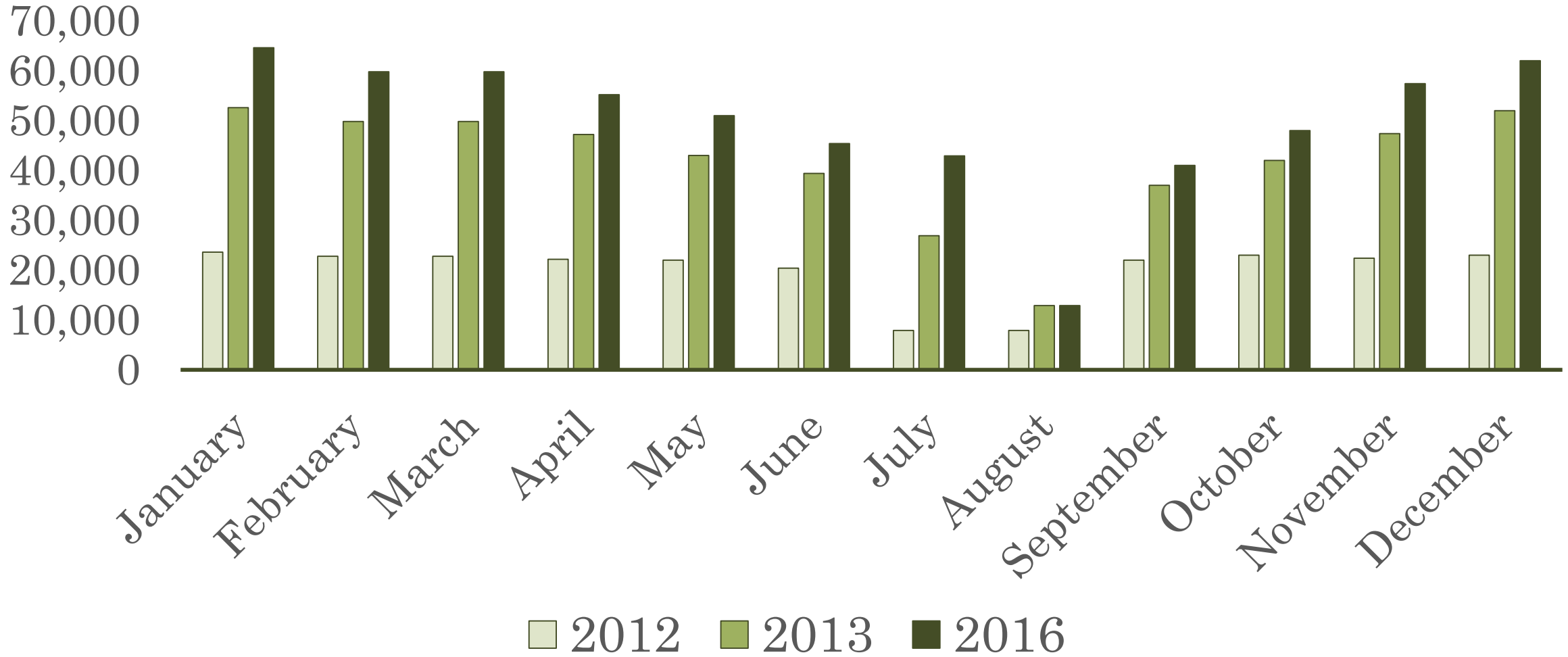
- New heating plants, CHPs, power plants being built in the region
- Annual consumption will increase to about 600 000 t



PREDICTED SITUATION IN THE REGION

- In connection with biomass use the following plants were or will be built/reconstructed in the region:
 1. **Heating plant Radvaň, Banská Bystrica:** district heating plant, nominal output $10 \text{ MW}_{\text{th}}$, wood chips consumption 30 000 t/year,
 2. **Biomass power plant joint with sewage processing plant, Banská Bystrica:** $6 \text{ MW}_e/18 \text{ MW}_{\text{th}}$ wood chips consumption 60 000 t/year,
 3. **District heat and power plant, Žiar n/Hronom:** intensification of wood chips consumption, $12 \text{ MW}_e/80 \text{ MW}_{\text{th}}$, wood chips consumption 200 000 t/year,
 4. **Power plant, Žarnovica:** $9,8 \text{ MW}_e/30 \text{ MW}_{\text{th}}$, wood chips consumption 120 000 t/year,
 5. **District heat and power plant, Zvolen:** intensification of wood chips consumption, $24,5 \text{ MW}_e/65 \text{ MW}_{\text{th}}$, wood chips consumption 200 000 t/year,
 6. **Biomass power plant, Banská Bystrica:** $6 \text{ MW}_e /18 \text{ MW}_{\text{th}}$, wood chips consumption 60 000 t/year,
 7. **Heating plant Sásová, Banská Bystrica:** $18 \text{ MW}_{\text{th}}$, wood chips consumption 40 000 t/year

MONTHLY WOOD CHIPS CONSUMPTION



CONCLUSIONS

- Enough available woody biomass 2.91 mn.t (NLC, 2013).
- Struggle to optimize the supply in the winter season, or to optimize the storage effectiveness and the capital locked in wood chips storage.
- Logistics are not efficient, mainly supply from particular forest districts.
- There is a need to decrease logistic costs



THANK YOU
FOR YOUR
ATTENTION