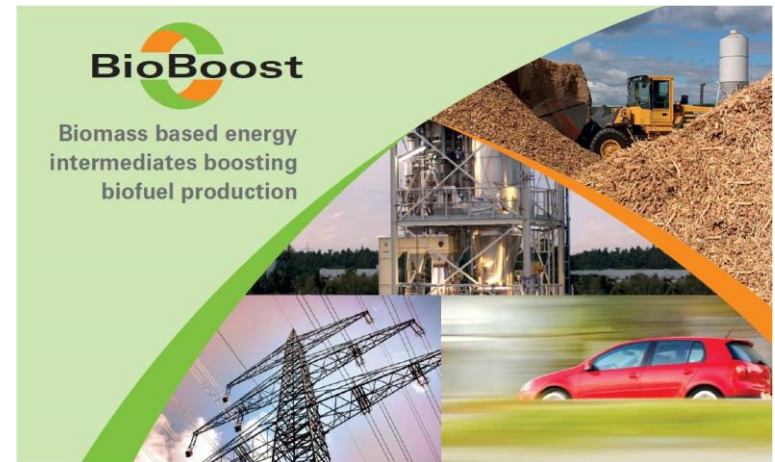


Geoportal for biomass potential assessment in EU27+CH



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Rafał Pudełko

Biomass based energy intermediates boosting biofuel production



Project Acronym	BioBoost
Project Reference	282873 in FP7
Theme	ENERGY.2011.3.7-1: Development of new or improved sustainable bio-energy carriers
Contract type	Collaborative project
Coordinator	Karlsruher Institut fuer Technologie (KIT)
Consortium	13 Beneficiaries from 6 countries
Start	01/2012
Duration	42 month
Budget	7.3 Mio €
Funding	5.1 Mio €

Consortium



The feedstock potential assessment for EU-27 + Switzerland in NUTS-3

1. Agricultural residues

- 1.1 Straw
- 1.2 Residuals of pruning
- 1.3 Livestock residues
- 1.4 Hay from permanent grassland
- 1.5 Perennial crops

2. Forestry residues

3. Natural conservation matter

- 3.1 Green urban areas
- 3.2 Hay and shrubs

4. Roadside vegetation

5. Urban and industrial waste

- 5.1 Biodegradable municipal waste
- 5.2 Bio-waste of food industry
- 5.3 Bio-waste of wood industry by-products



Methods, approaches and data

Database

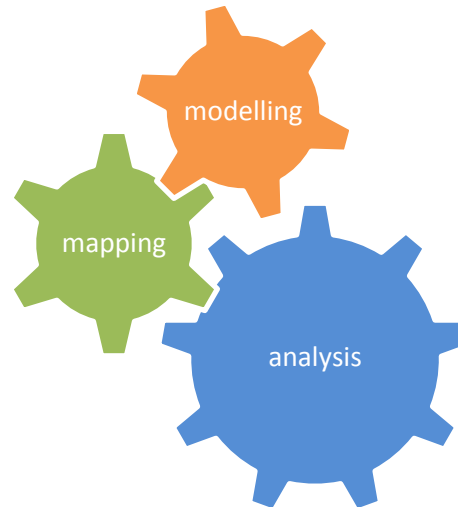
Corine Land Cover map,
Open street map,
Natura 2000,

Literature review

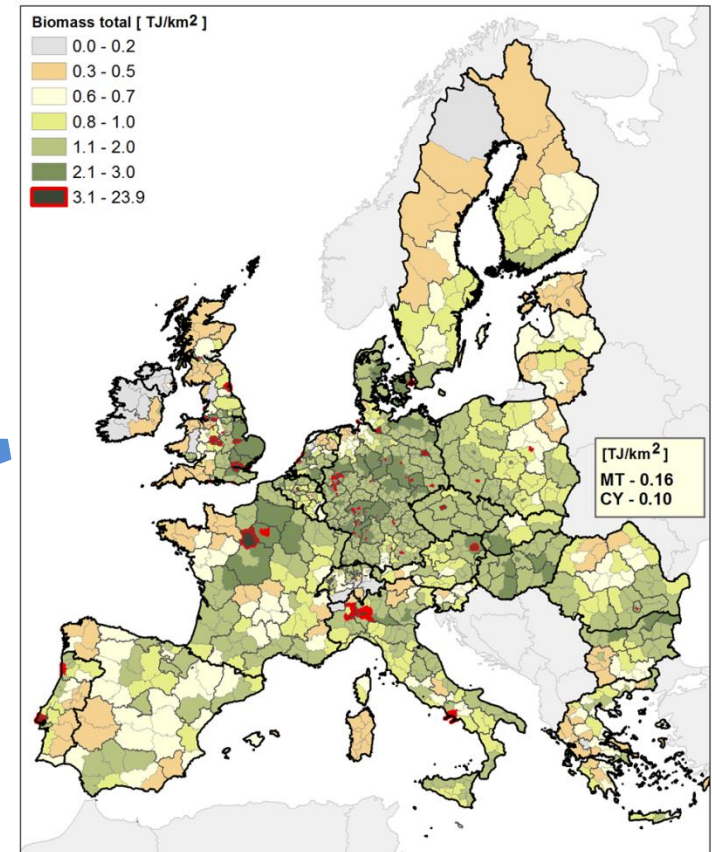
Statistical data:

Eurostat, ESRI data,
European Environment
Agency, Organisation for
Economic Co-Operation
and Development, Data on
the Net Primary
Productivity,
TBFR-2000

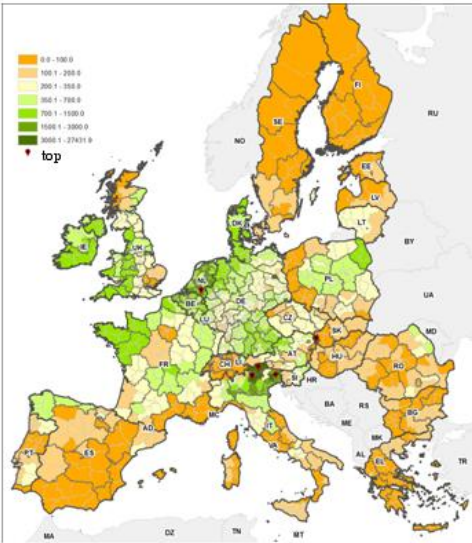
Processing



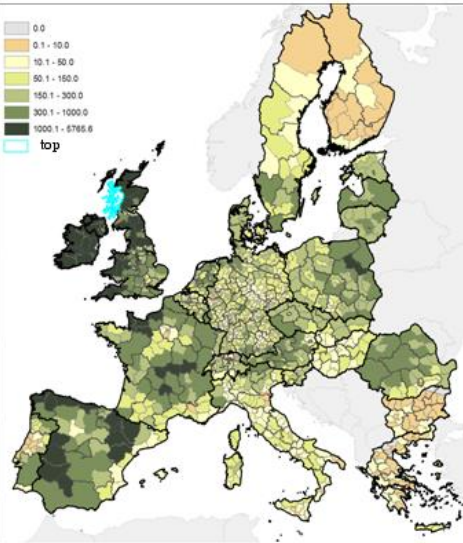
Results



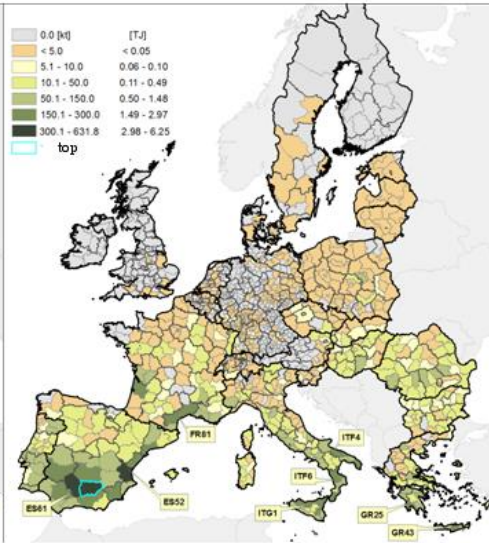
Samples of assessed feedstock potentials



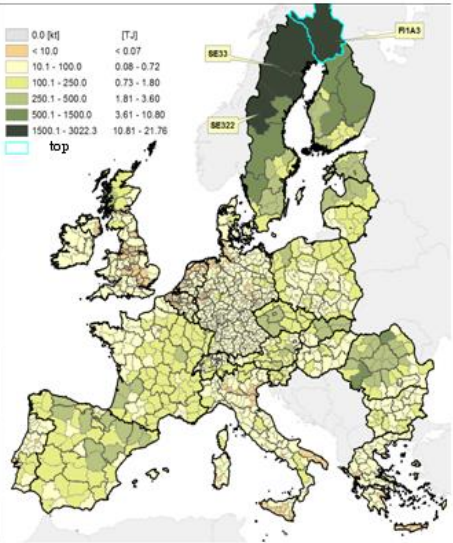
theoretical potential of manure production



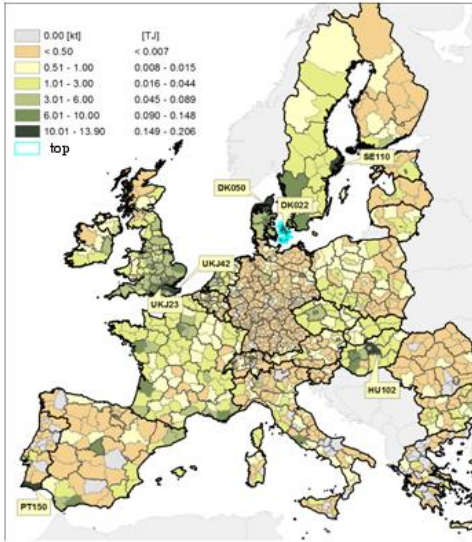
theoretical potential of hay yield



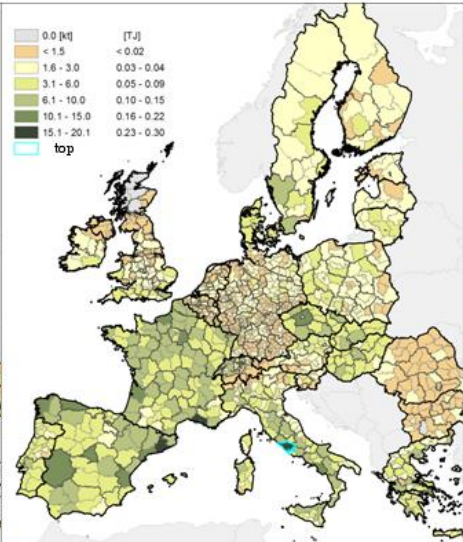
technical potential of biomass and energy from long-term plantations maintenance



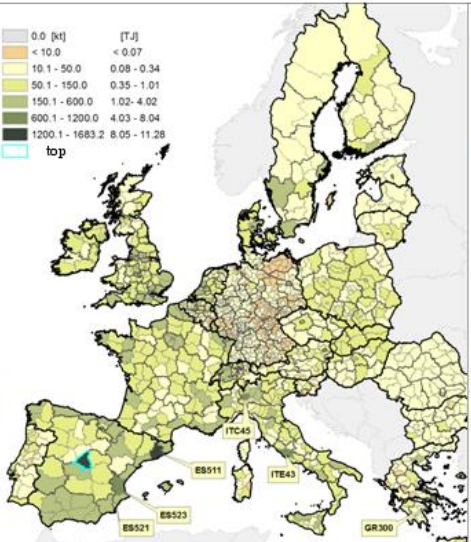
technical potential of biomass and energy from forest biomass waste



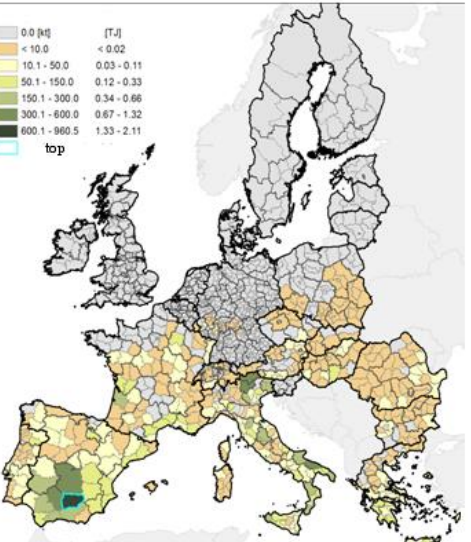
technical potential of biomass and energy from waste of urban greenery maintenance



technical potential of biomass and energy from the maintenance road side vegetation



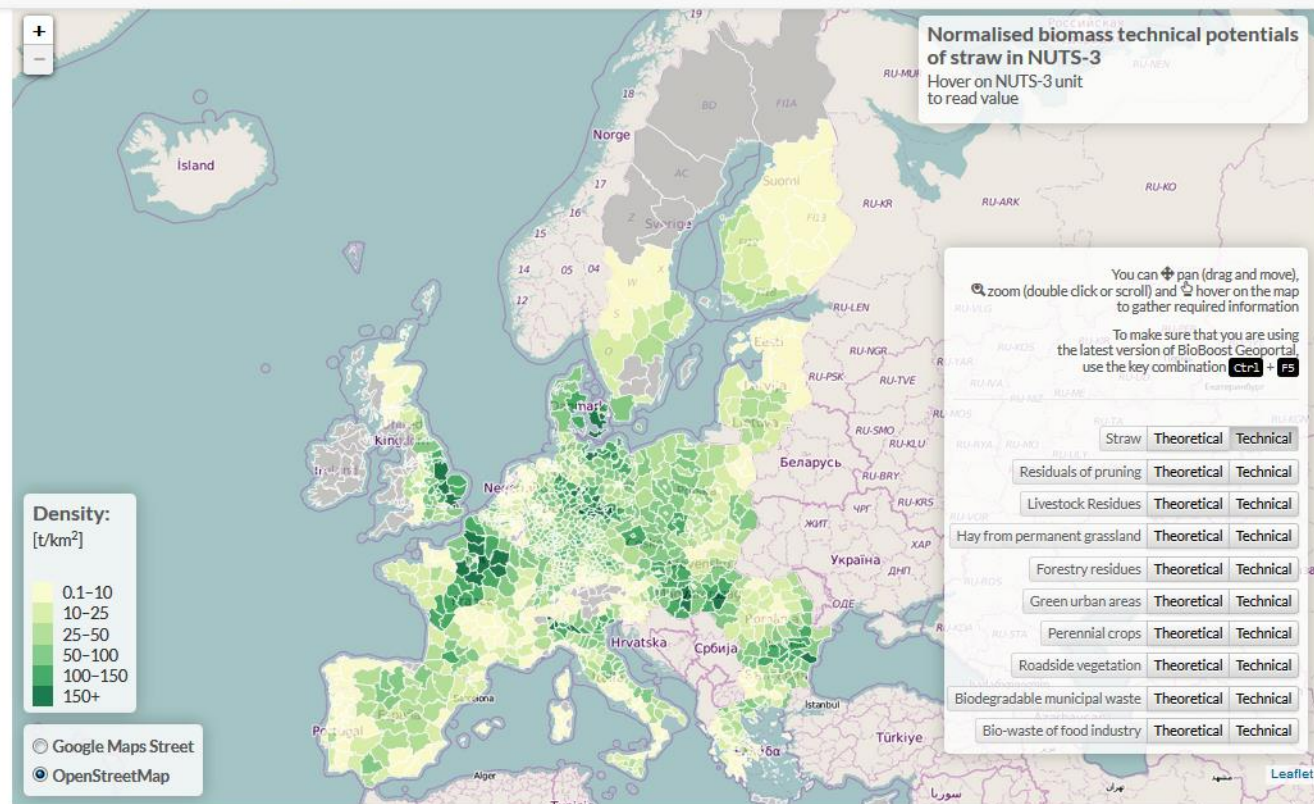
technical potential of biomass and energy from biodegradable waste in the NUTS-3



technical potential of biomass and energy from food industry waste

The feedstock potential assessment for EU-27 + Switzerland in NUTS-3

1.Agricultural residues	
1.1 Straw	149.7 Mt (1960 PJ)
1.2 Residuals of pruning	15.4 Mt (152 PJ)
1.3 Livestock residues	21.4 Mt (21 PJ)
1.4 Hay from permanent grassland	6.9 Mt (92.6 PJ)
1.5 Perennial crops	50.5 Mt (948,5 PJ)
2. Forestry residues	
Forestry residues	117.9Mt (1186 PJ)
3. Natural conservation matter	
3.1 Green urban areas	1.18 Mt (17 PJ)
3.2 Hay and shrubs	3.68 Mt (49 PJ)
4. Roadside vegetation	3.17 Mt (47 PJ).
5. Urban and industrial waste	
5.1 Biodegradable municipal waste	71.2 Mt (477 PJ)
5.2 Bio-waste of food industry	14.3 Mt (51 PJ)
5.3 Bio-waste of wood industry by-products	5.59 Mt (56 PJ)



!!! To view the technical potential statistics, enable calculating, then click any units on the map and "Sum values in columns" button

Enable calculating

Number of selected NUTS 0

Remove all

Sum values in columns

NUTS name	Straw	Residuals of pruning	Livestock Residues	Hay from permanent grassland	Forestry residues	Green urban areas	Perennial crops	Roadside vegetation	Biodegradable municipal waste	Bio-waste of food industry	Total
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Map description

The map present technical straw potential that was assessed by subtraction of the amount of straw necessary for animal bedding and feeding in addition to the part of straw that is needed for incorporation into the soil. Straw for energy purposes was defined as a total production minus from the straw used in the production of animal feed and bedding, which is necessary in the maintenance of soil.

Knowledge base

Knowledge Base

Database Organisation Geographical Information System (GIS)

Database

EUROSTAT is the statistical office of the European Union situated in Luxembourg. Its task is to provide the European Union with statistics at European level that enable comparisons between countries and regions http://ec.europa.eu/eurostat/portal/page/portal/about_eurostat/introduction

Corine Land Cover Map is one of the subjects included in CORINE system to collect information on the forms of land use: <http://www.eea.europa.eu/data-and-maps/data/corine-land-cover-2006-raster-2>

Soil Datasets A collection of maps which represent all attributes that are present in the in the Soil Geographical Database of Eurasia at scale 1:1,000,000 (version 4 beta) and the PedoTransfer Rules Database (version 2.0). <http://eusoils.jrc.ec.europa.eu/library/maps/maps.html>

Natura 2000 Map presents wide network of nature protection areas <http://natura2000.eea.europa.eu/>

OpenStreetMap (OSM) OpenStreetMap is a collaborative project that has been developed in order to create a free editable map of the world. <http://www.openstreetmap.org>

Net Primary Productivity map (NPP) products for Europe and North Africa is derived from simulations with the Biosphere Energy Transfer (BETHY/DLR) model. It is a fixed grid map in rectangular projection annotated with latitude, longitude, and WG584 date with a spatial resolution of 1km2. http://wdc.dlr.de/data_products/SURFACE/npp.php

SAGE // Crop Calendar Dataset - this dataset is the result of digitising and geo-referencing existing observations of crop planting and harvesting dates. http://www.sage.wisc.edu/download/sacks/crop_calendar.html

TBFR-2000 is database that includes statistical and descriptive information together with analysis undertaken by high level experts in the following thematic areas: Area of Forest and Other Wooded Land, Ownership and Management Status, Wood Supply and Carbon Sequestration; Biological Diversity and Environmental Protection; Forest Condition and Damage; and Protective and Socio-Economic Functions.

Density: [t/km²]

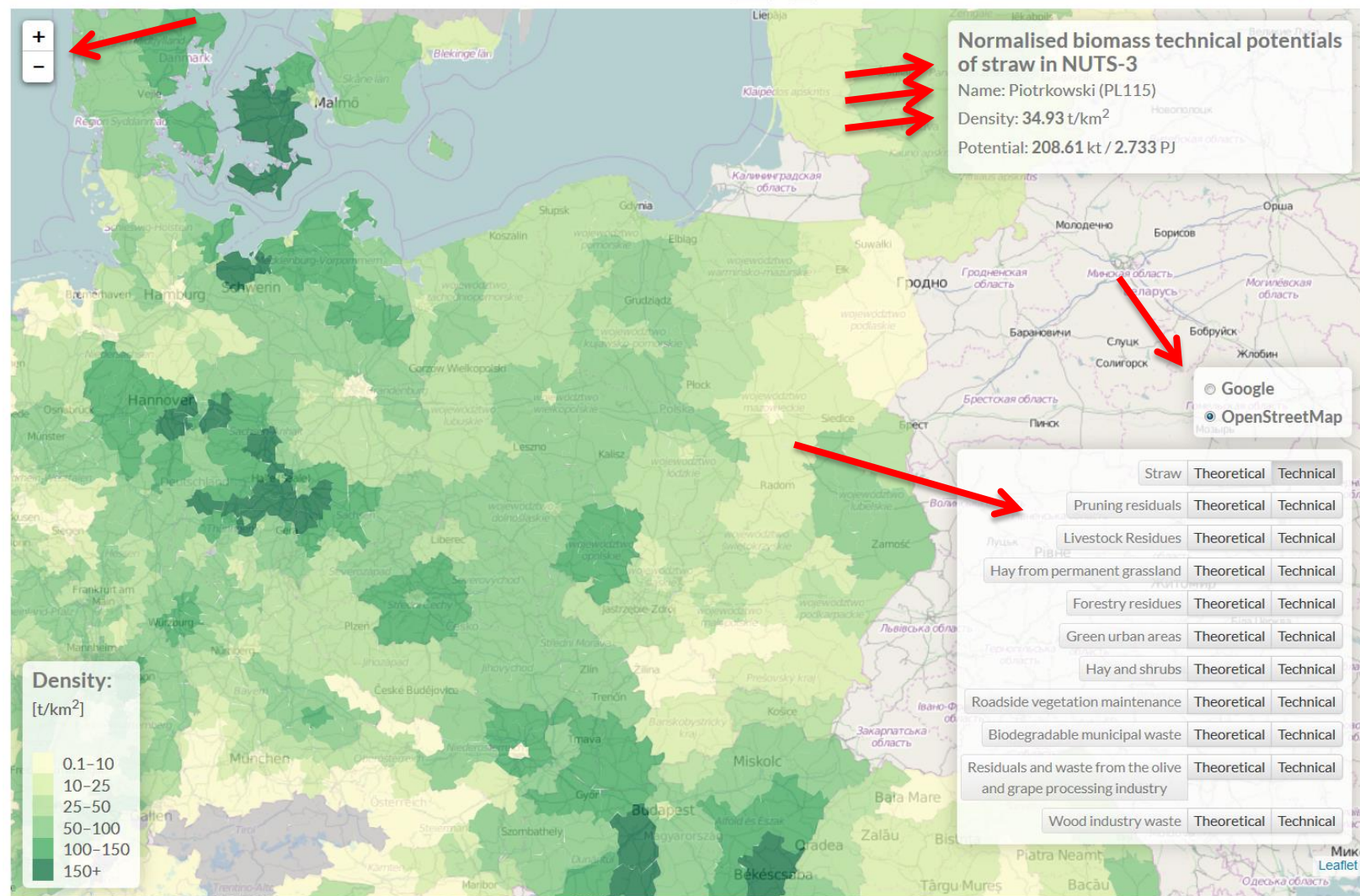
0.1-10
10-25
25-50
50-100
100-150
150+

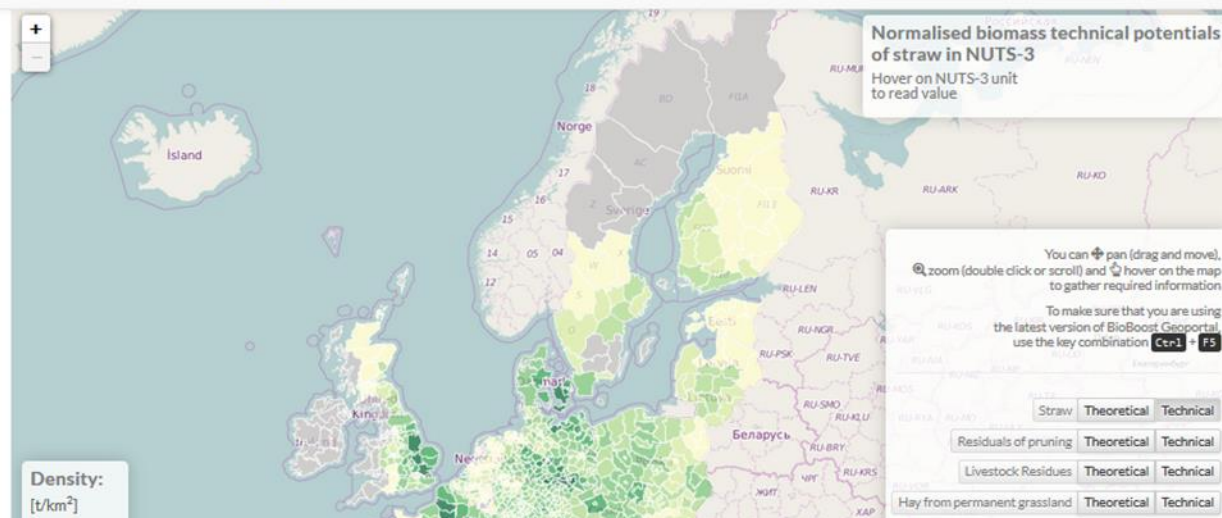
Close

Biomass potential maps

You can  pan (drag and move),  zoom (double click or scroll) and  hover on the map to gather required information

To make sure that you are using the latest version of BioBoost Geoportal, use the key combination **Ctrl + F5**





Calculate biomass potentials (kilotones of technical potentials) in selected NUTS. Click on map to add row

Enable calculating

Sum values in columns

Remove all rows

NUTS name	Straw	Pruning residuals	Livestock	Permanent grassland	Forestry	Green urban	Hay and shrubs	Roadside vegetation	Municipal waste	Olive and grape	Wood industry	Total
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Enable calculating

Number of selected NUTS 0

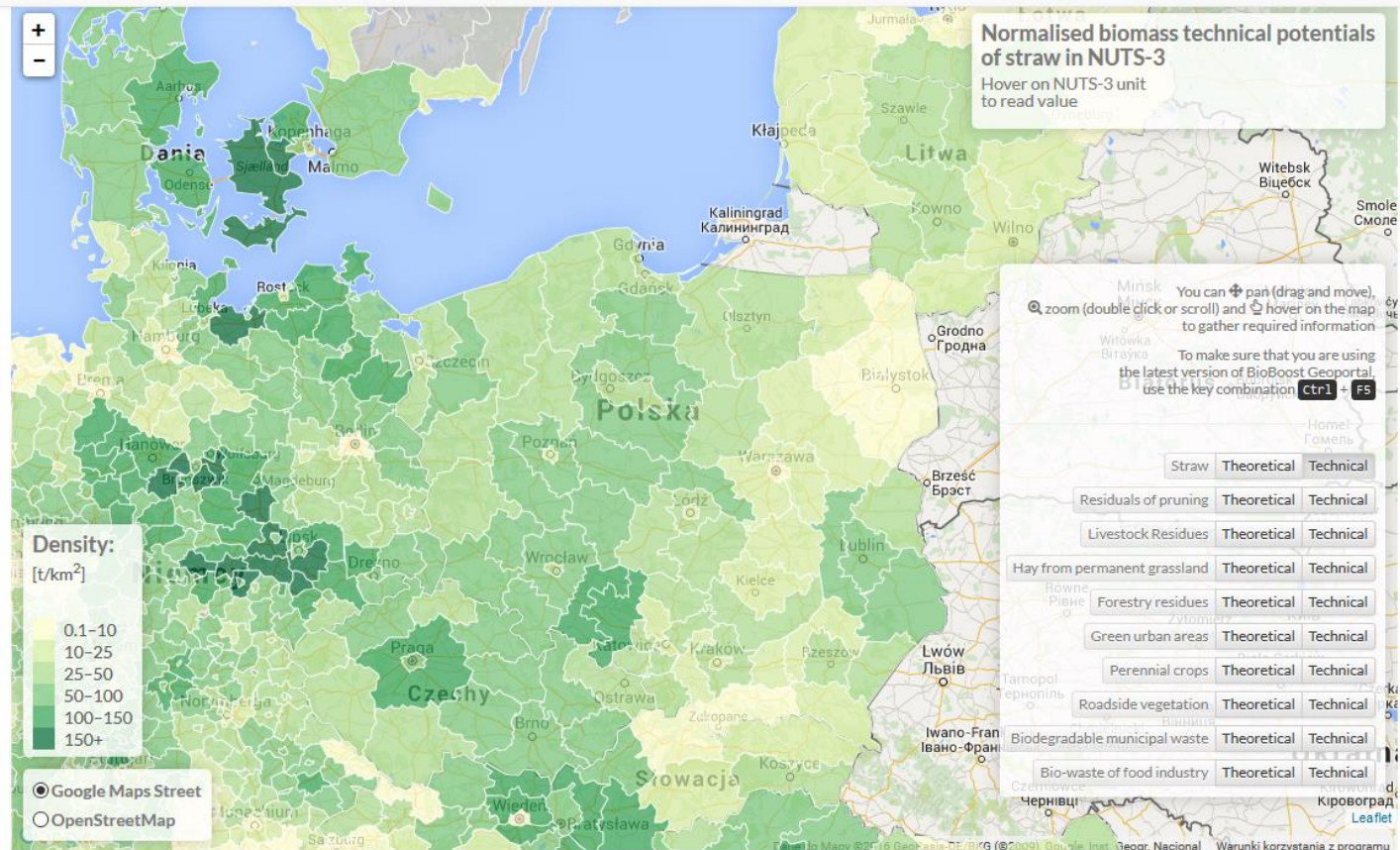
Remove all

Sum values in columns

NUTS name	Straw	Residuals of pruning	Livestock Residues	Hay from permanent grassland	Forestry residues	Green urban areas	Perennial crops	Roadside vegetation	Biodegradable municipal waste	Bio-waste of food industry	Total
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To view the technical potential statistics, enable calculating, then click any units on the map and "Sum values in columns" button

Enable calculating

Number of selected NUTS
4

Remove all

Sum values in columns

NUTS name	Straw	Residuals of pruning	Livestock Residues	Hay from permanent grassland	Forestry residues	Green urban areas	Perennial crops	Roadside vegetation	Biodegradable municipal waste	Bio-waste of food industry	Total
Puławski	334.65	8.84	0.00	0.00	158.85	0.24	81.94	1.78	30.97	0.04	617.30
Lubelski	284.07	0.50	0.00	0.00	64.92	1.19	68.41	1.18	67.49	0.04	487.80
Bialski	233.35	0.99	0.00	0.00	187.11	0.17	67.06	1.44	17.28	0.04	507.45
Chełmsko-zamojski	679.70	0.40	0.00	0.00	217.31	0.54	139.38	2.27	40.60	0.04	1080.23
Total	1531.78	10.74	0.00	0.00	628.19	2.14	356.79	6.66	156.34	0.14	2692.78



New Strategies on Bio-Economy in Poland

Project Acronym: *BioEcon*

Project Number: 669062

Starting date: 01/07/2015

Duration in months: 60

Call (part) identifier: H2020-WIDESPREAD-2014-2

Topic: WIDESPREAD-2-2014 ERA Chairs

Thank you for your attention

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