
DanuP-2-Gas

Innovative model to drive energy security and diversity in the Danube Region via combination of bioenergy with surplus renewable energy

 danup2gas.eu

 Atlas Manual

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Danup-2-Gas Atlas



TRANSNATIONAL BIOMASS & INFRASTRUCTURE

- Biomass
- Connection Point
- Industrial Plant
- Renewable Energy Plant
- Biochar
- Transport Hub
- Transnational Link

1. Select Biomass Sources

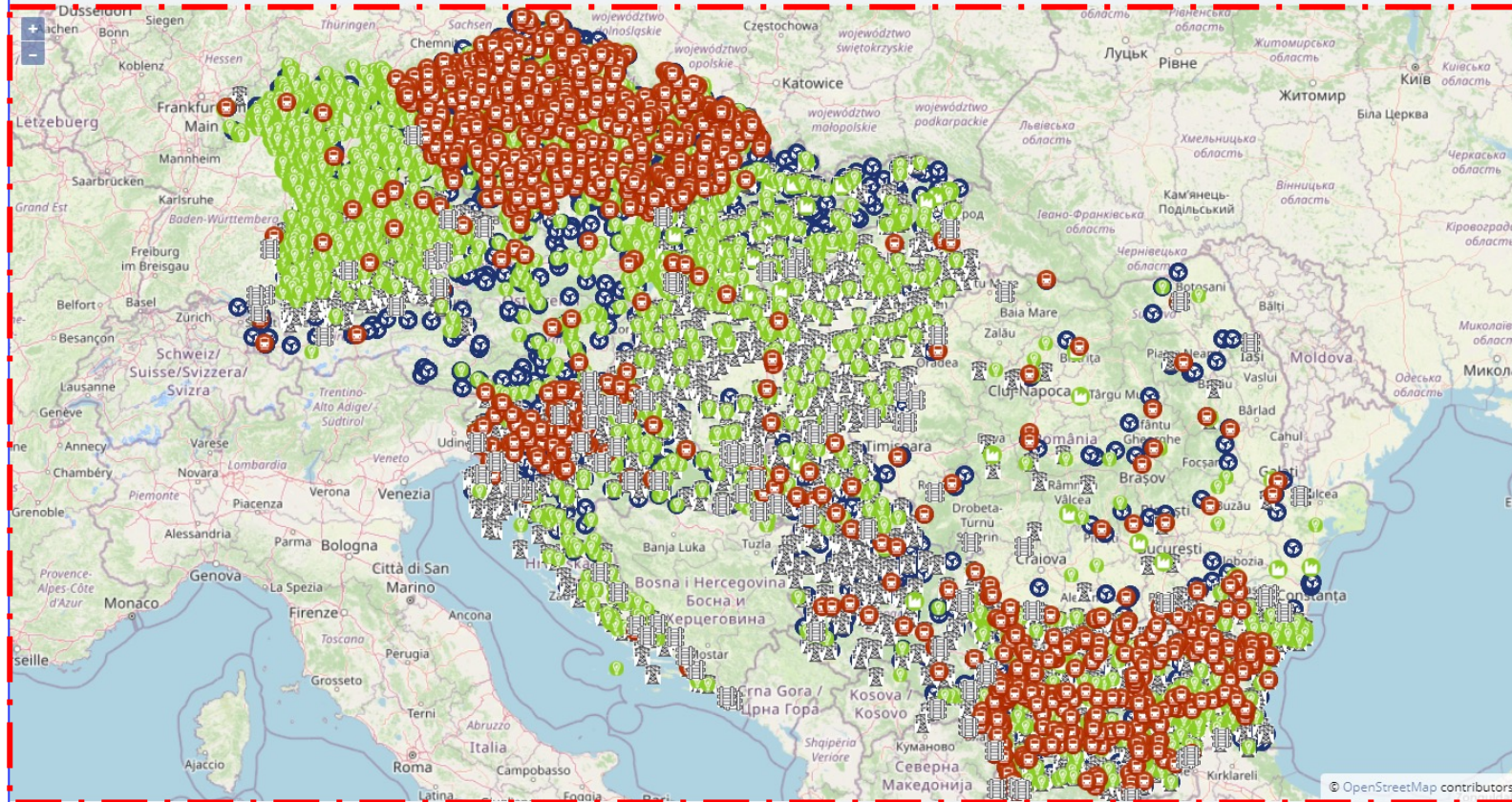
Loading the data will take a few seconds.

<https://www.danup2gas.eu/atlas-test>

TRANSNATIONAL RENEWABLE ENERGY ATLAS



Danup-2-Gas Atlas



TRANSNATIONAL BIOMASS & INFRASTRUCTURE

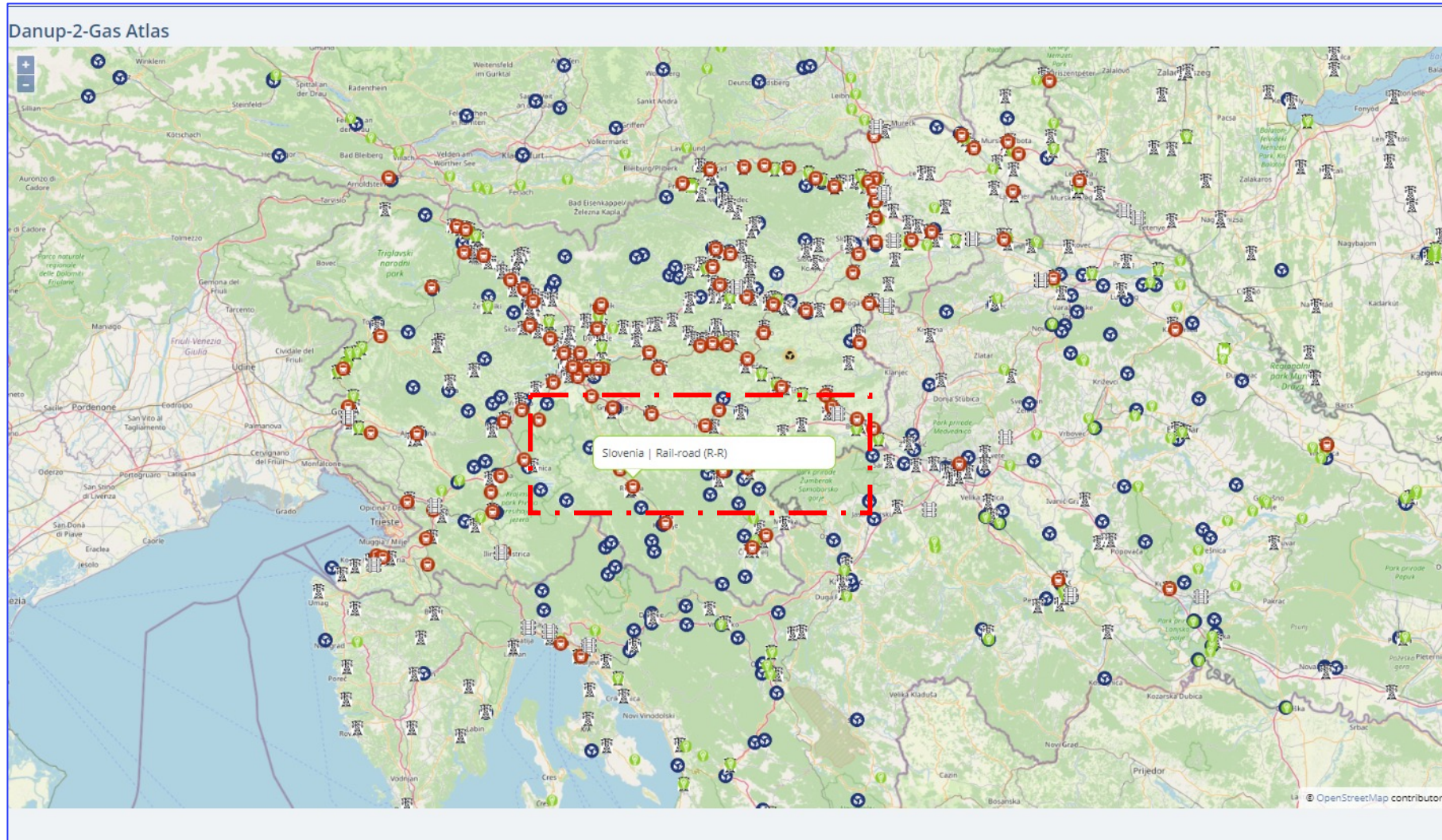
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1. Select Biomass Sources Filter Icons

Once you see the icons on the background, Atlas is ready to use. You have to close the pop-up manually after the data is visible on the map.

<https://www.danup2gas.eu/atlas-test>

TRANSNATIONAL RENEWABLE ENERGY ATLAS



Zoom in / out:

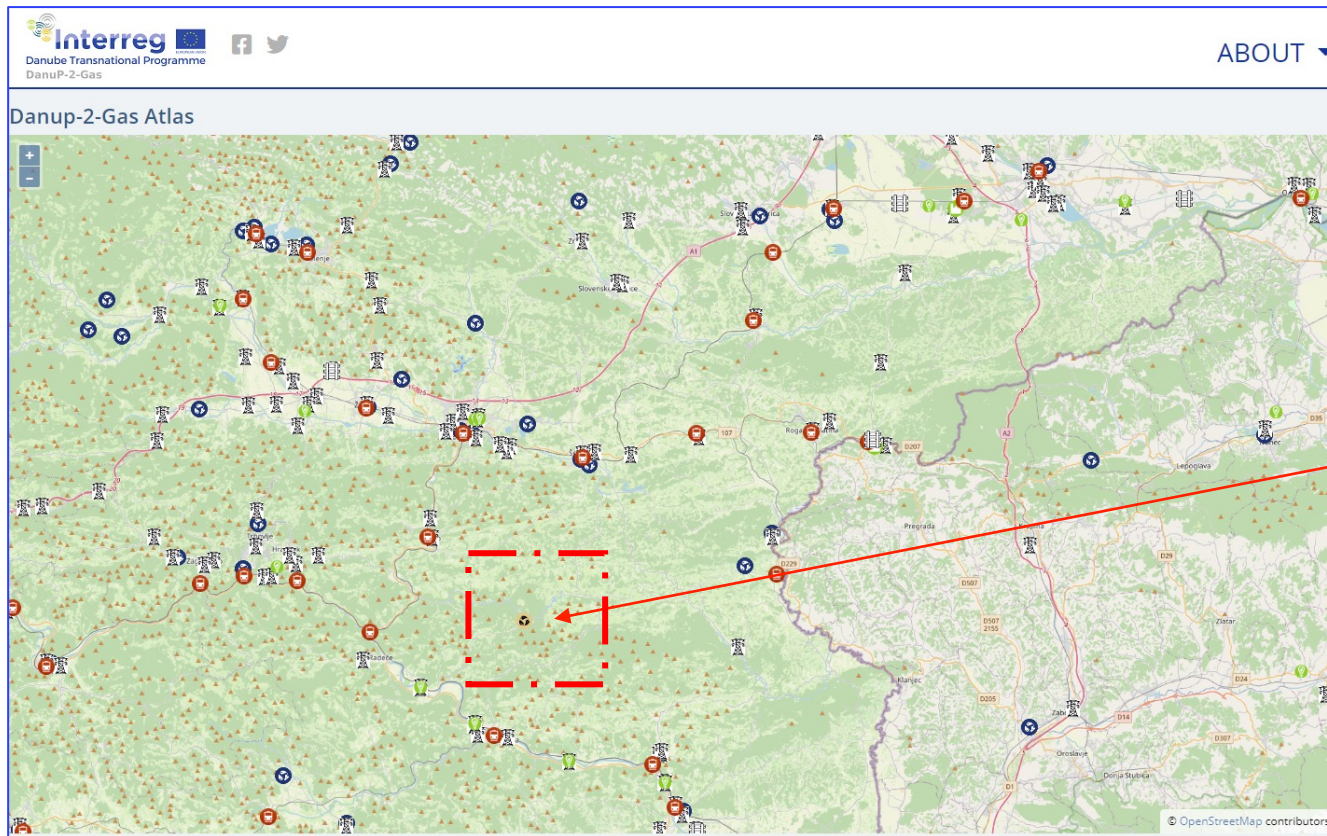
Turning the mouse wheel upwards will zoom in and turning the mouse wheel downwards will zoom out of the map.

Pan:

Clicking the left mouse click will enable panning the map to the desired direction

Hovering the mouse on icons will show its Country and the data type

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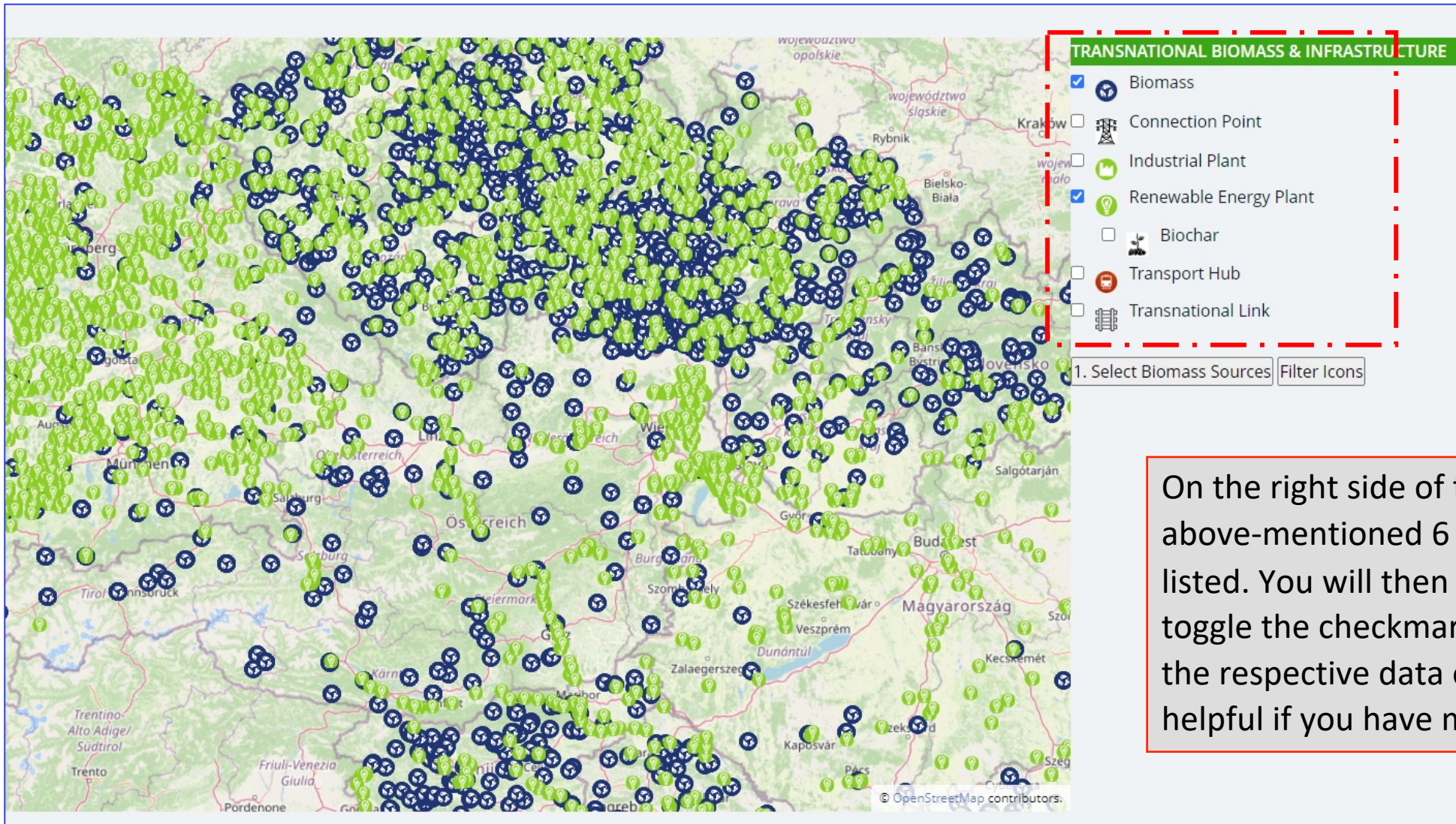
1. Select Biomass Sources

TIMBLES D.O.O.
Biomass Source

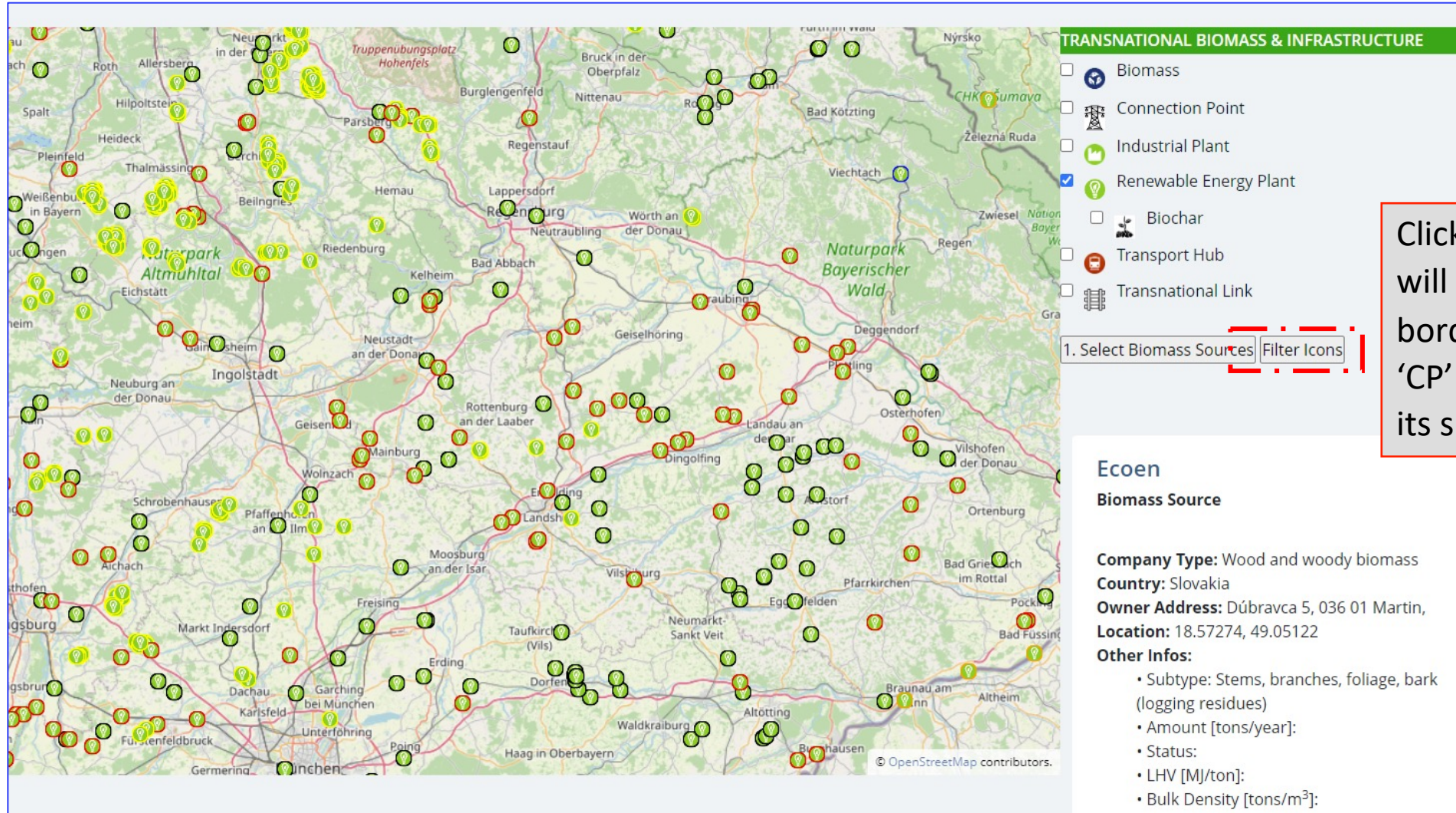
Company Type: Wood and woody biomass
Country: Slovenia
Owner Address: Lahov Graben 5, 3273 Jurklošte
Location: 15.33307834, 46.09299592
Other Infos:

- Subtype: Stems, branches, foliage, bark (logging residues)
- Amount [tons/year]: 365
- Status: idle
- LHV [MJ/ton]: 19500
- Bulk Density [tons/m³]: 0.32
- Moisture [%]: 45
- Hemicellulose [% dry]: 0.25
- Lignin [% dry]: 28.5
- Cellulose [% dry]: 42.5
- Ash Content [% dry]: 10
- Contaminants [% dry]: 1
- Carbon [%]: 50
- Price [€]:
- Transport Price [€]: 0.15

Clicking on any icon on the map will show the detailed information of that point on the lower right section of the screen. It will include all the information such as its Name, type, location, etc.



On the right side of the screen, the above-mentioned 6 categories will be listed. You will then have the ability to toggle the checkmark to hide or show the respective data on the map. This is helpful if you have many data points.

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1. Select Biomass Sources Filter Icons

Clicking on “Filter Icons” will add additional icon borders on ‘IP’, ‘REP’ and ‘CP’ for easy separation of its sub-types.

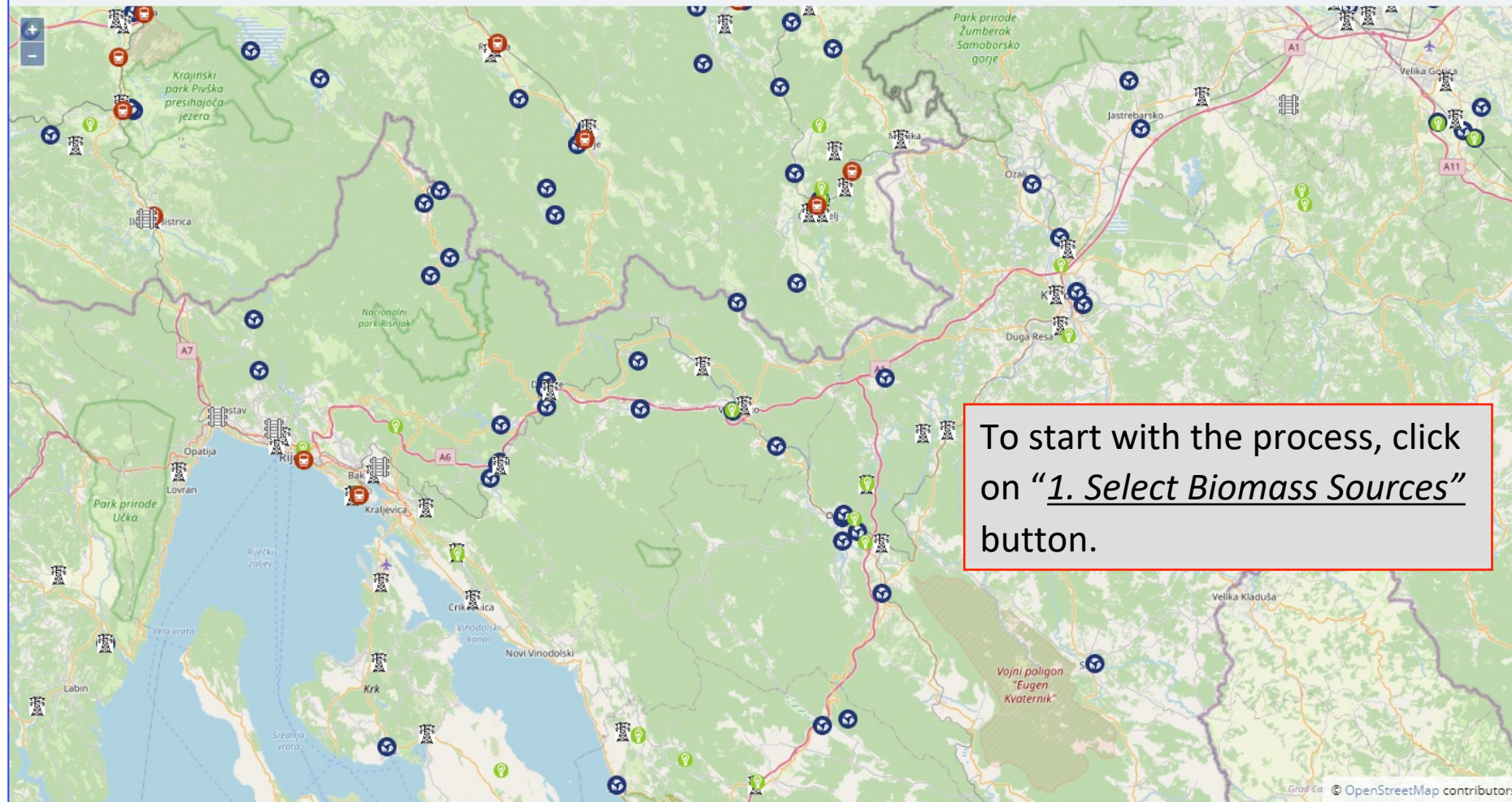
Ecoen
Biomass Source

Company Type: Wood and woody biomass
Country: Slovakia
Owner Address: Dúbravca 5, 036 01 Martin,
Location: 18.57274, 49.05122
Other Infos:

- Subtype: Stems, branches, foliage, bark (logging residues)
- Amount [tons/year]:
- Status:
- LHV [MJ/ton]:
- Bulk Density [tons/m³]:



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1. Select Biomass Sources Filter Icons

To start with the process, click on "1. Select Biomass Sources" button.

Korenić - pilana i obrada elemenata

Biomass Source

Company Type: Wood and woody biomass

Country: Croatia

Owner Address: Orišje 7, 47251, Bosiljevo

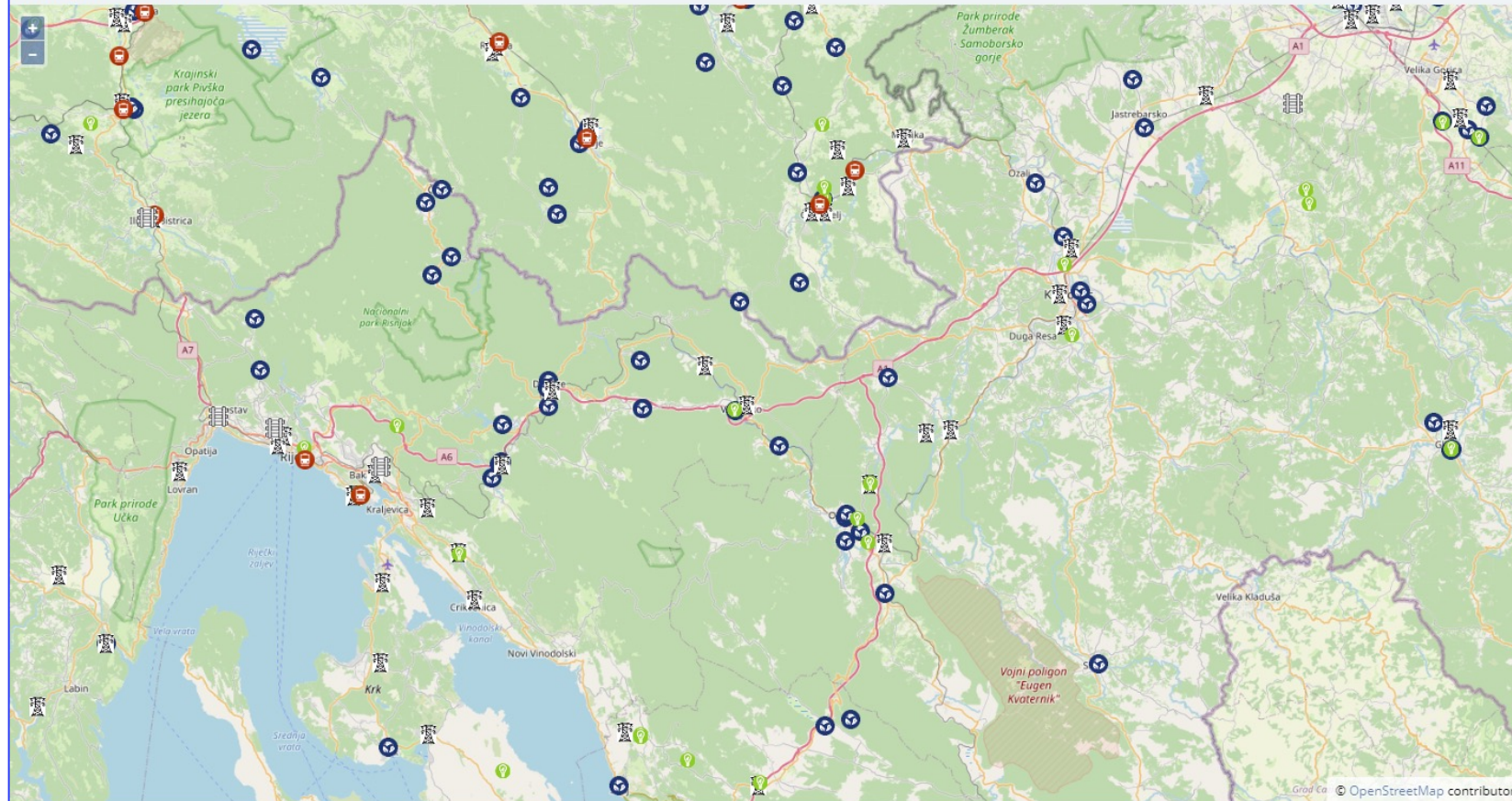
Location: 15.2894428, 45.4059775

Other Infos:








- Subtype: Sawdust, sawmill (industrial)
- Amount [tons/year]: 1323.5005
- Status: in-use
- LHV [MJ/ton]: 12500



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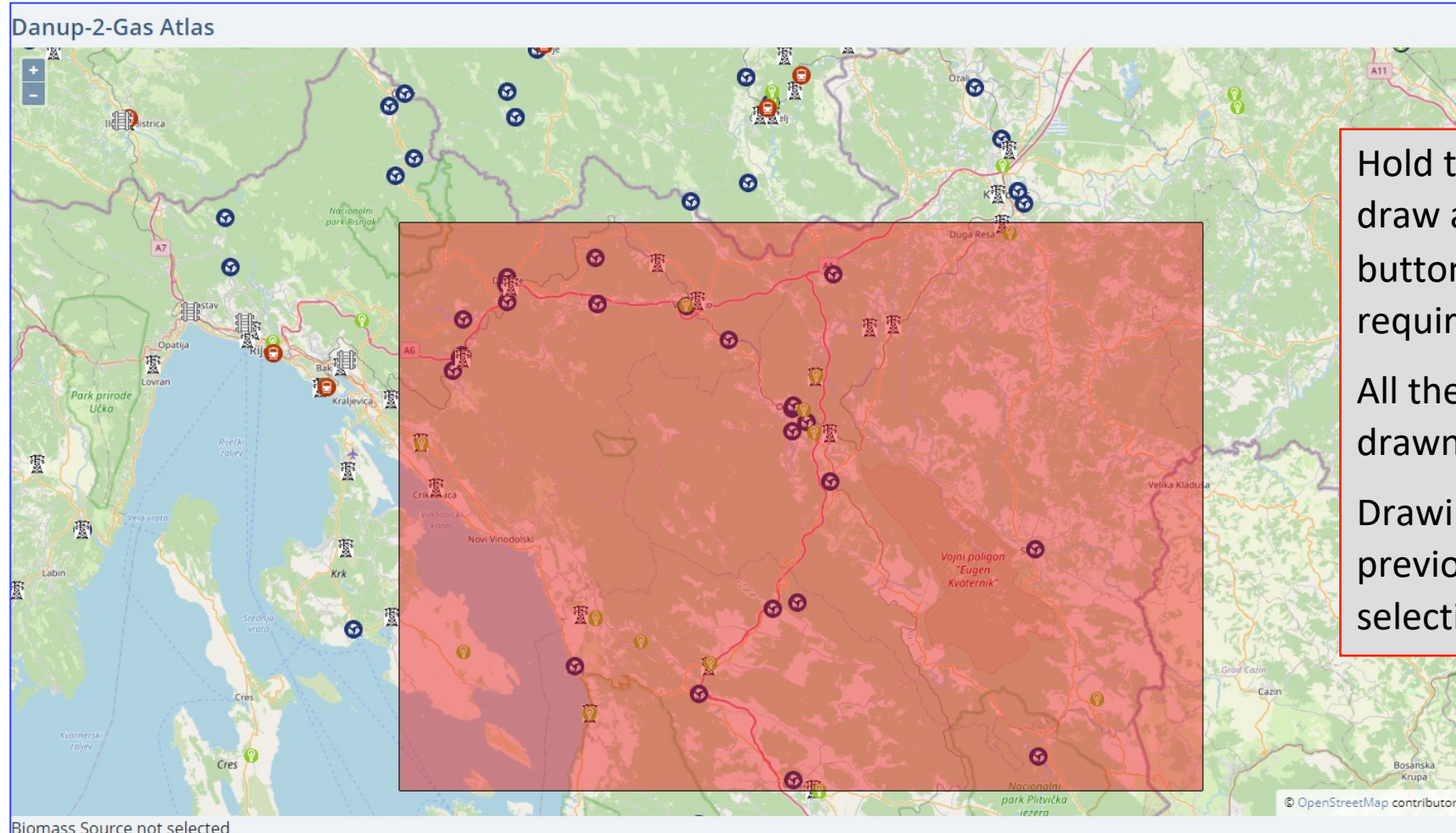
TRANSNATIONAL BIOMASS & INFRASTRUCTURE

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1. Select Biomass Sources

Please press the **'Ctrl'** key (Win / Linux) or **'⌘'** Key (Mac) to draw a box by clicking and dragging on the map.

This section will guide you through the process by displaying the next steps to follow



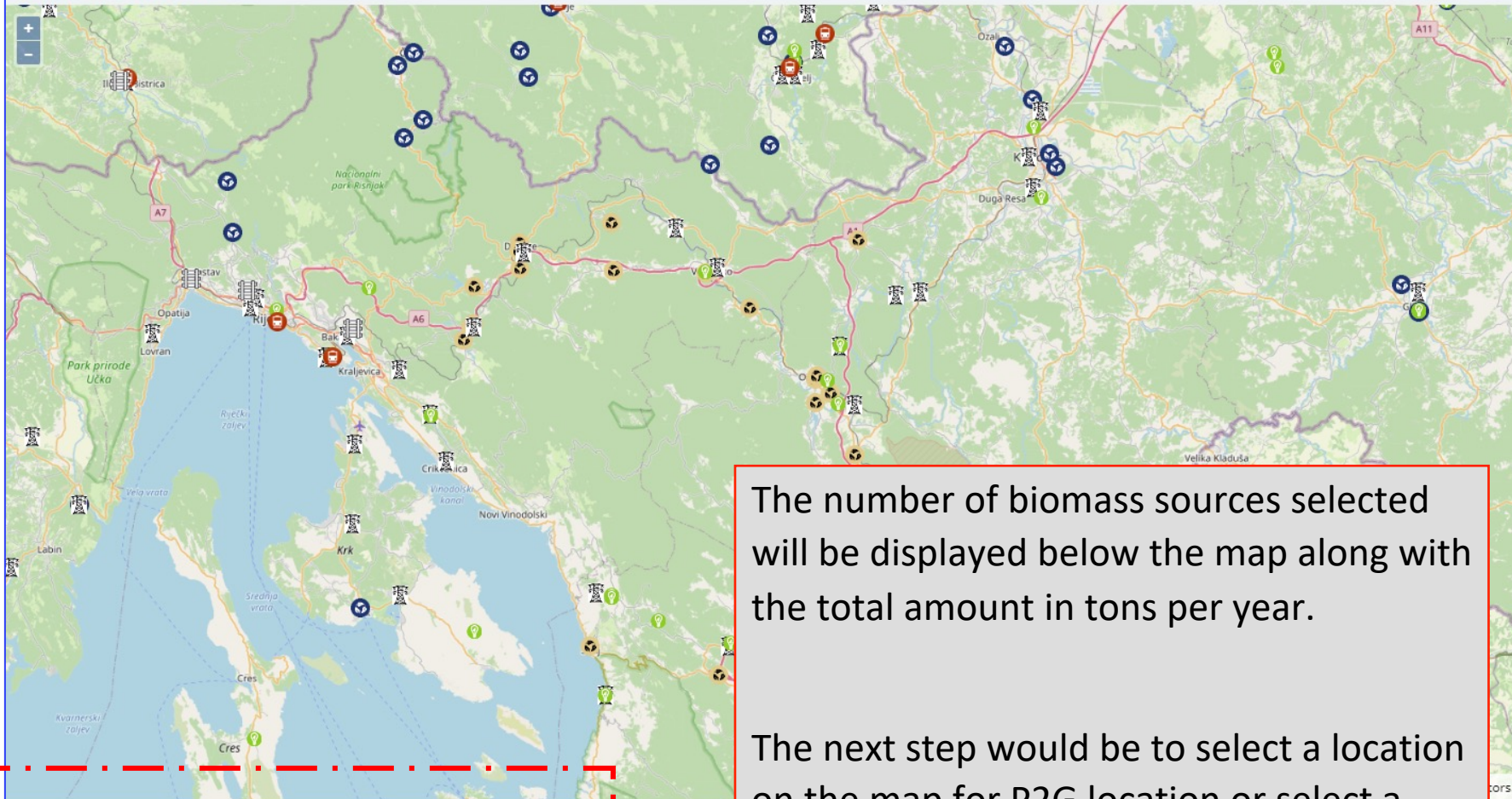
Hold the ctrl key on the keyboard then draw a rectangle using the mouse left button on the map covering the required biomass sources.

All the biomass sources inside the drawn rectangular box will be selected.

Drawing a new rectangle will reset the previous selection and will start a new selection.



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1. Select Biomass Sources

2. new P2G location or

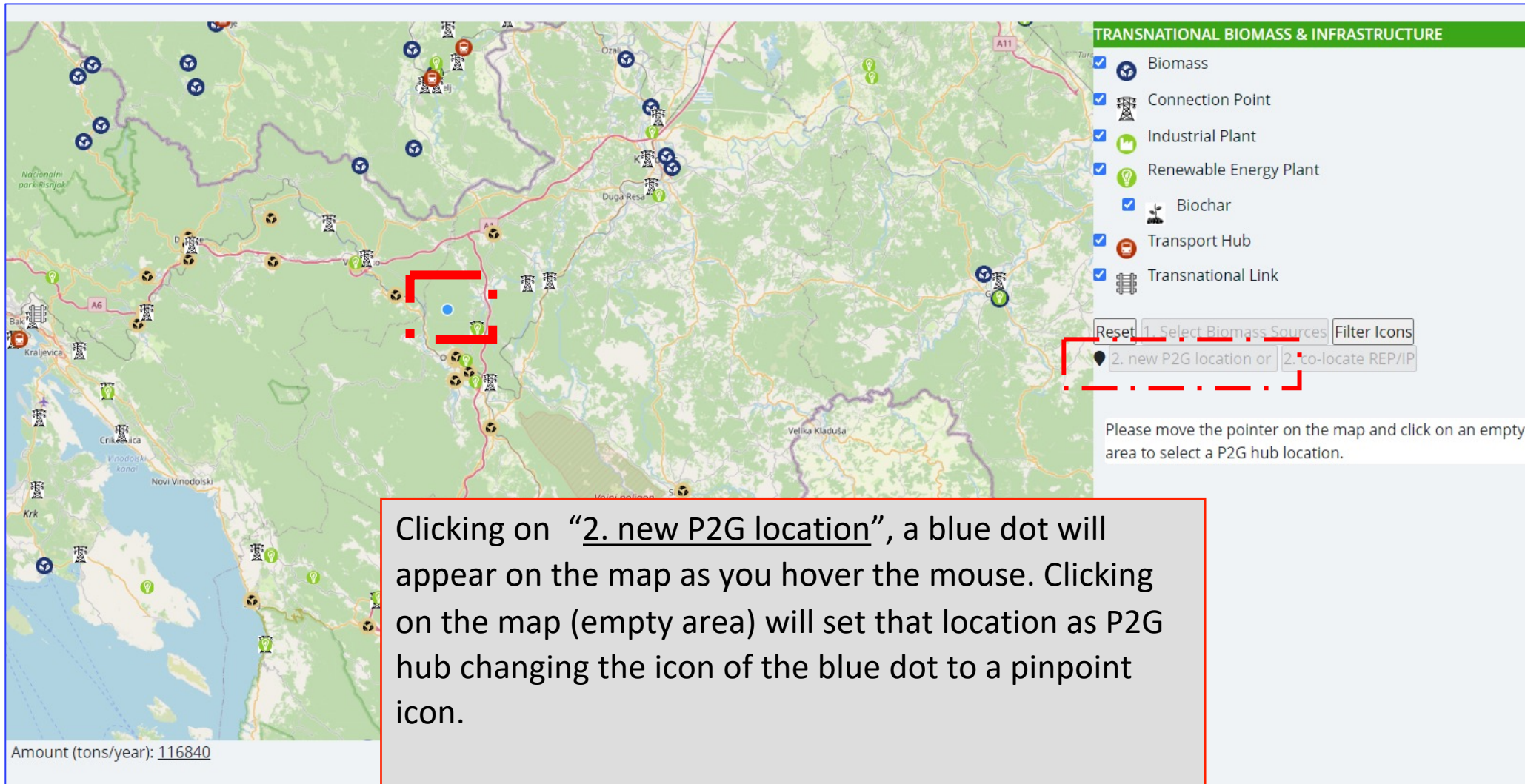
Please select **new P2G location** to select a point on the map for a P2G hub location.

Please select **co-locate REP/IP** to co-locate with existing Renewable Energy Plant or an Industrial Plant.

Selected Biomass Sources: [25] | Total Amount (tons/year): 116840

The number of biomass sources selected will be displayed below the map along with the total amount in tons per year.

The next step would be to select a location on the map for P2G location or select a REP or IP to co-locate the P2G hub with



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Reset | 1. Select Biomass Sources | Filter Icons

2. new P2G location or 2. co-locate REP/IP

Please move the pointer on the map and click on an empty area to select a P2G hub location.

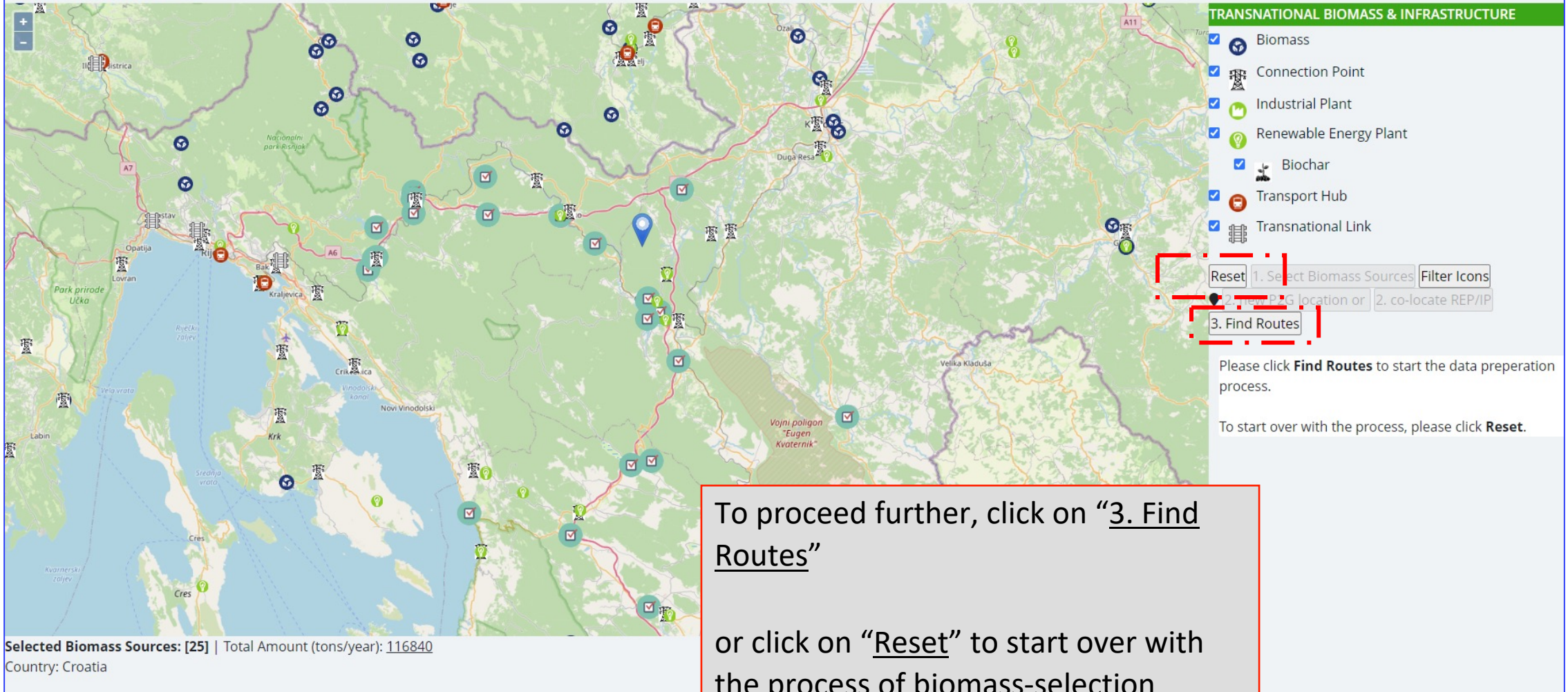
Amount (tons/year): 116840

Clicking on “2. new P2G location”, a blue dot will appear on the map as you hover the mouse. Clicking on the map (empty area) will set that location as P2G hub changing the icon of the blue dot to a pinpoint icon.

The icon of all the previously selected biomass will be changed to a blue/white checkbox.



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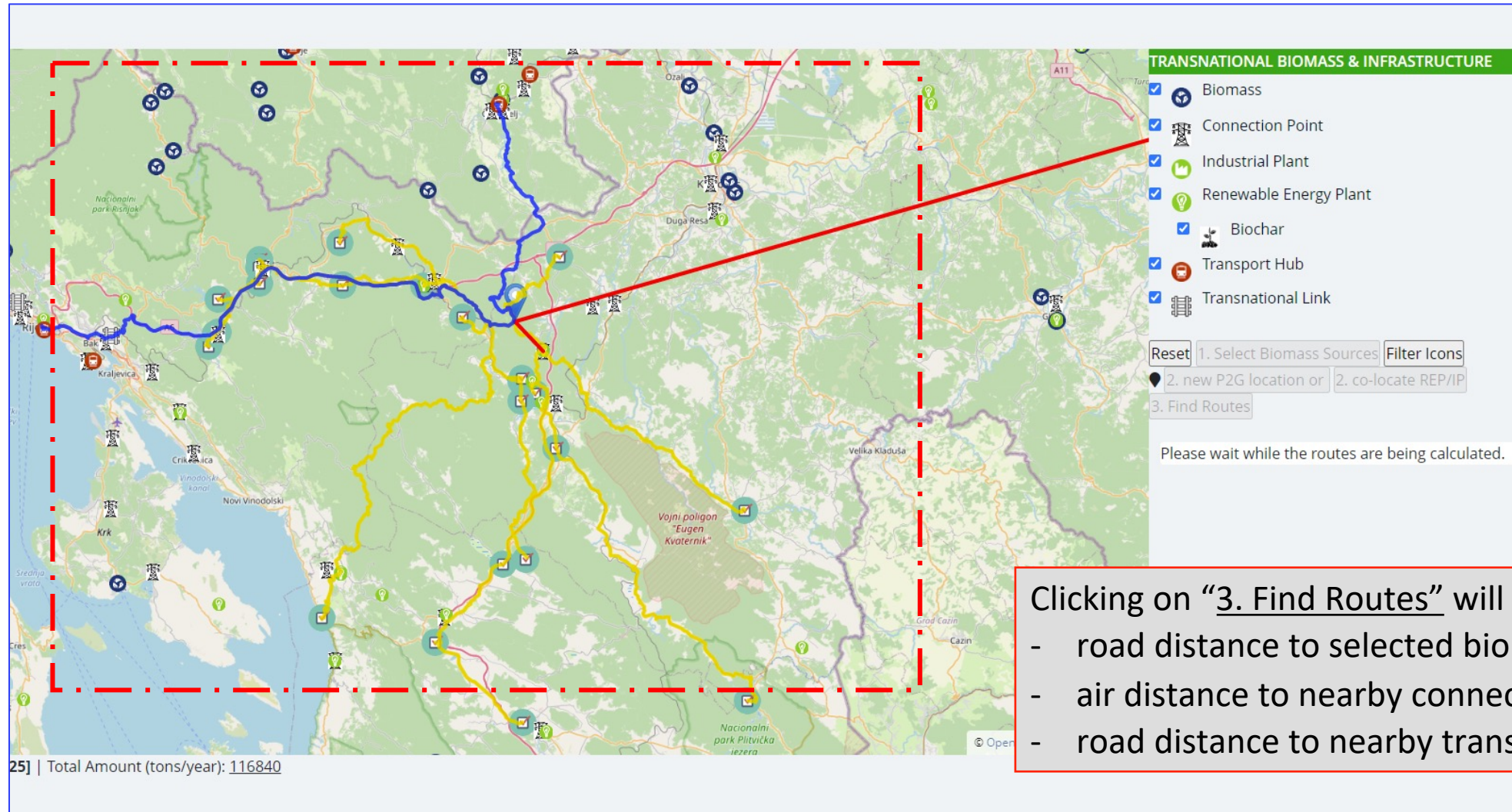
Reset | 1. Select Biomass Sources | Filter Icons
2. Find P+G location or 2. co-locate REP/IP
3. Find Routes

Please click **Find Routes** to start the data preparation process.
To start over with the process, please click **Reset**.

To proceed further, click on “3. Find Routes”

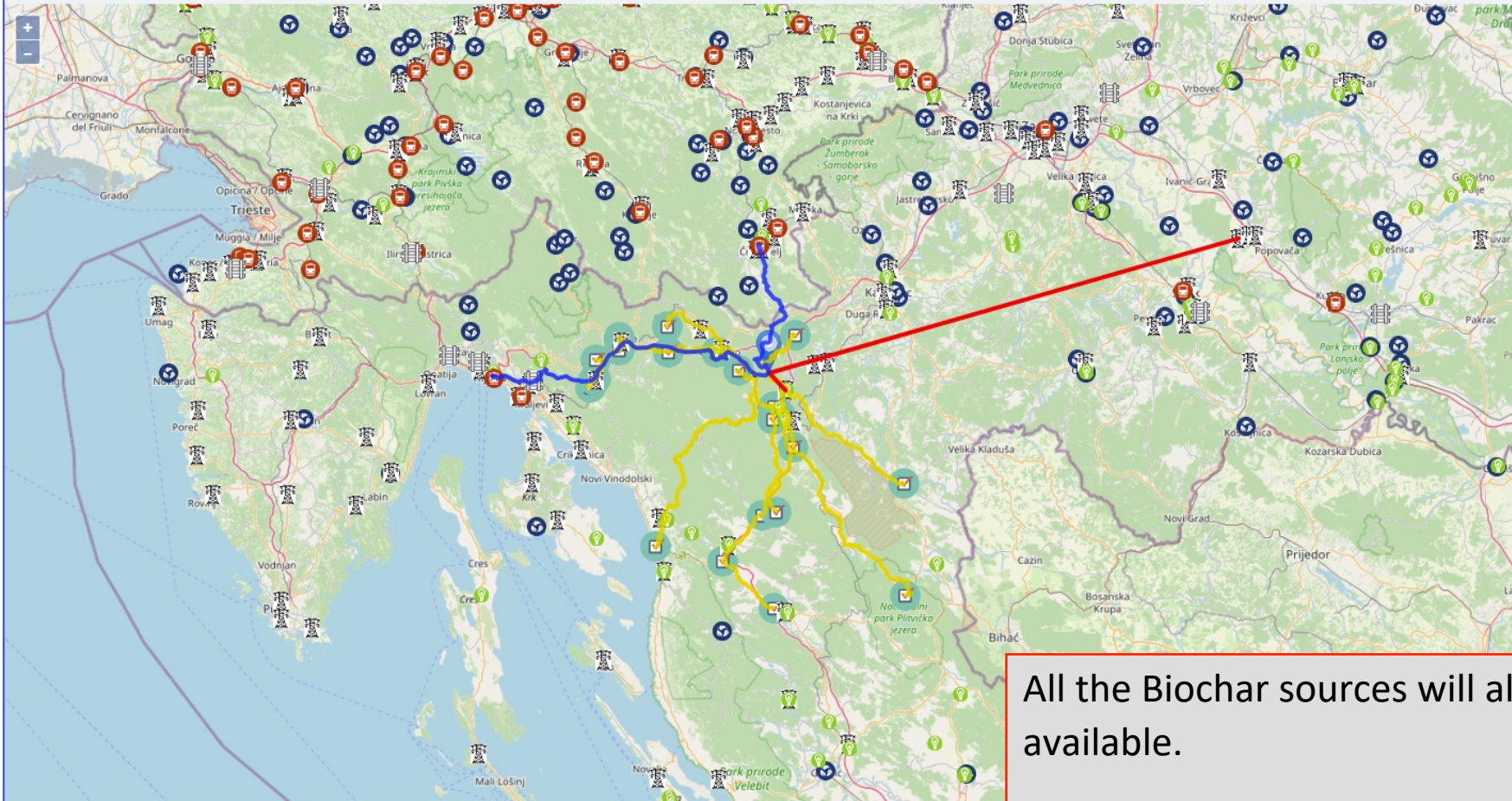
or click on “Reset” to start over with the process of biomass-selection

Selected Biomass Sources: [25] | Total Amount (tons/year): 116840
Country: Croatia





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Reset 1. Select Biomass Sources Filter Icons
2. new REP location 2. relocate REP/IP
3. Find Routes Export Data

Data is ready to be exported. Please click **Export Data** to export the JSON file.

To start over with the process, please click **Reset**.

All the Biochar sources will also be selected, if available.

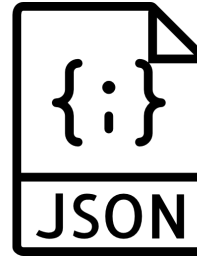
You will then be prompted to export the data as JSON file using the “Export Data” button.

Selected Biomass Sources: [25] | Total Amount (tons/year): 116840
Country: Croatia



data as JSON file

(input_for_OT.json)



```
input_for_OT.json
1 {
2   "REP_para": {},
3   "IP_para": {},
4   "CP_investment_prices": {
5     "elec_grid": {
6       "cp_id": 246,
7       "grid_type": "Distribution",
8       "distance_to_eCP": 5.215382235770896,
9       "unit_cost_transmission": 4.5,
10      "unit_cost_distribution": 13,
11      "capacity_cost_transmission": 220,
12      "capacity_cost_distribution": 193
13    },
14    "gas_grid": {
15      "cp_id": 150,
16      "grid_type": "Transmission",
17      "distance_to_gCP": 105.69898867714743,
18      "unit_cost_transmission": 0.46,
19      "unit_cost_distribution": 0.46,
20      "capacity_cost_transmission": 385,
21      "capacity_cost_distribution": 100
22    },
23    "water_grid": {
24      "unit_cost": 2,
25      "capacity_cost": 2
26    }
27  },
28  "electricity": {
29    "day_tariff": {
30      "price": 0.3866,
31      "transmission_fees": 0.0053,
32      "distribution_fees": 0.019
33    },
34    "night_tariff": {
35      "price": 0.2274,
36      "transmission_fees": 0.0027,
37      "distribution_fees": 0.0093
38    },
39    "wend_tariff": {
40      "price": 0

```

JSON file length: 7,080 lines: 328

The default file name for the JSON file is “input_for_OT.json”

You can open the file in any file viewer application and check the data.

The next step would be to import the file into the “Optimization tool”

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Reset 1. Select Biomass Sources **Filter Icons**

2. new P2G location or 2. co-locate REP/IP

3. Find Routes **Export Data**

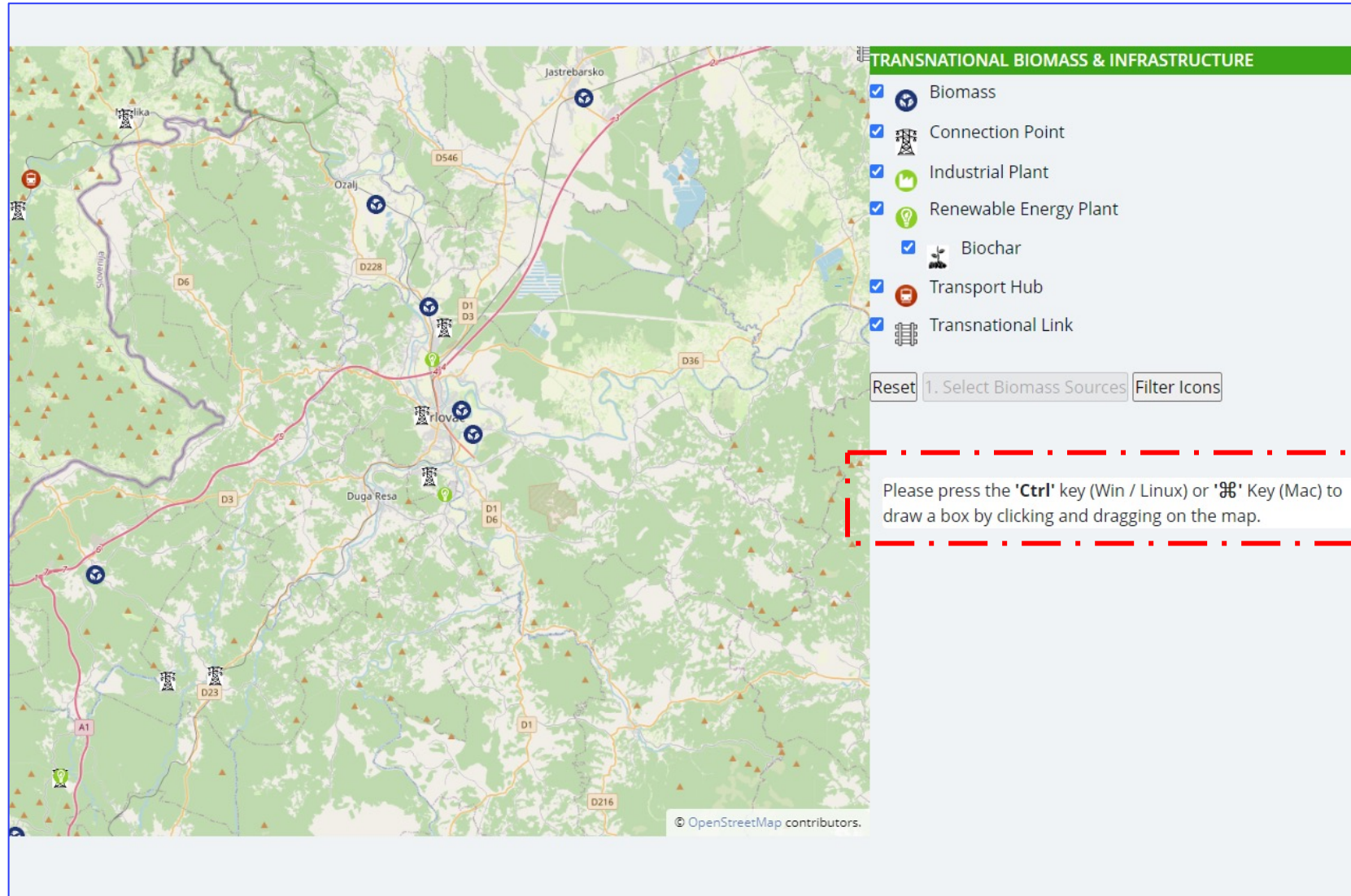
Data is ready to be exported. Please click **Export Data** to export the JSON file.

To start over with the process, please click **Reset**.

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Click “Reset” or reload the page to start the process again

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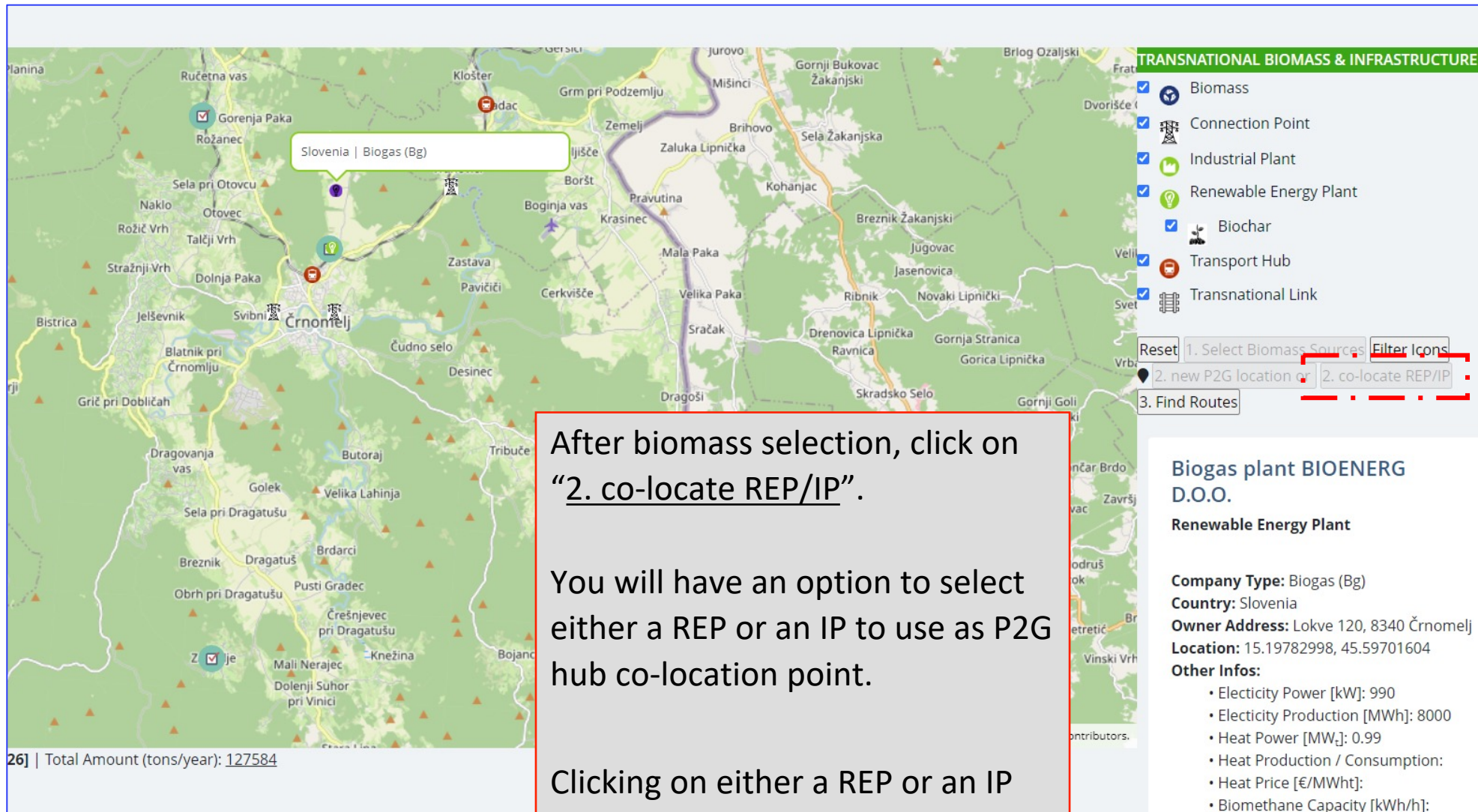
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Reset 1. Select Biomass Sources Filter Icons

Please press the 'Ctrl' key (Win / Linux) or '⌘' Key (Mac) to draw a box by clicking and dragging on the map.

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Clicking on “Reset” will prompt you to select the biomass sources as before.



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Reset 1. Select Biomass Sources Filter Icons
2. new P2G location or 2. co-locate REP/IP
3. Find Routes

Biogas plant BIOENERG D.O.O.
Renewable Energy Plant

Company Type: Biogas (Bg)
Country: Slovenia
Owner Address: Lokve 120, 8340 Črnomelj
Location: 15.19782998, 45.59701604
Other Infos:

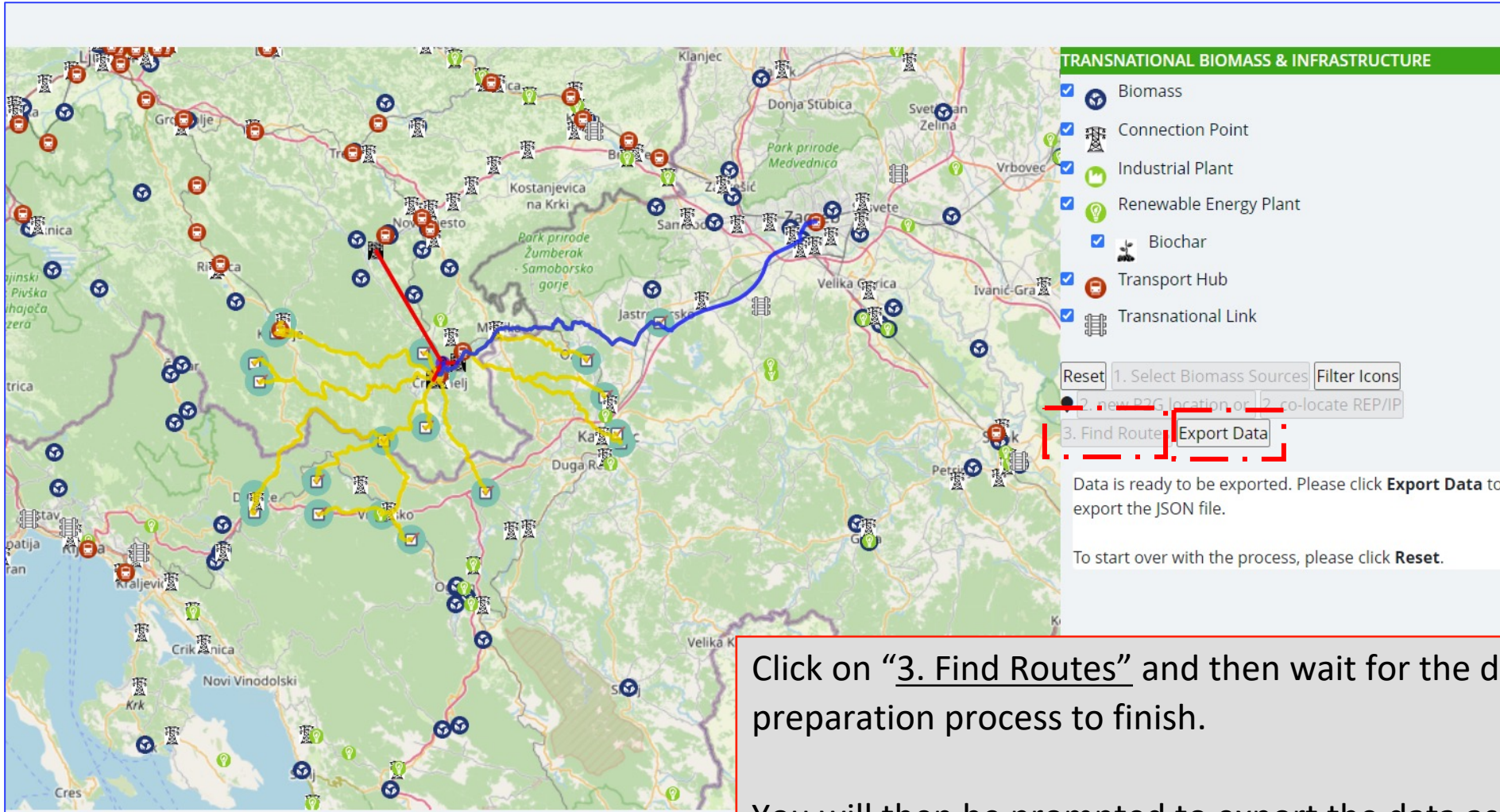
- Electricity Power [kW]: 990
- Electricity Production [MWh]: 8000
- Heat Power [MW]: 0.99
- Heat Production / Consumption:
- Heat Price [€/MWh]:
- Biomethane Capacity [kWh/h]:

26] | Total Amount (tons/year): 127584

After biomass selection, click on “2. co-locate REP/IP”.

You will have an option to select either a REP or an IP to use as P2G hub co-location point.

Clicking on either a REP or an IP on the map will change its icon indicating its selection.



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Reset 1. Select Biomass Sources Filter Icons

2. new B2G location or 2. co-locate REP/IP

3. Find Routes Export Data

Data is ready to be exported. Please click **Export Data** to export the JSON file.

To start over with the process, please click **Reset**.

Click on “3. Find Routes” and then wait for the data preparation process to finish.

You will then be prompted to export the data as JSON file using the “Export Data” button, as before.



THANK YOU

