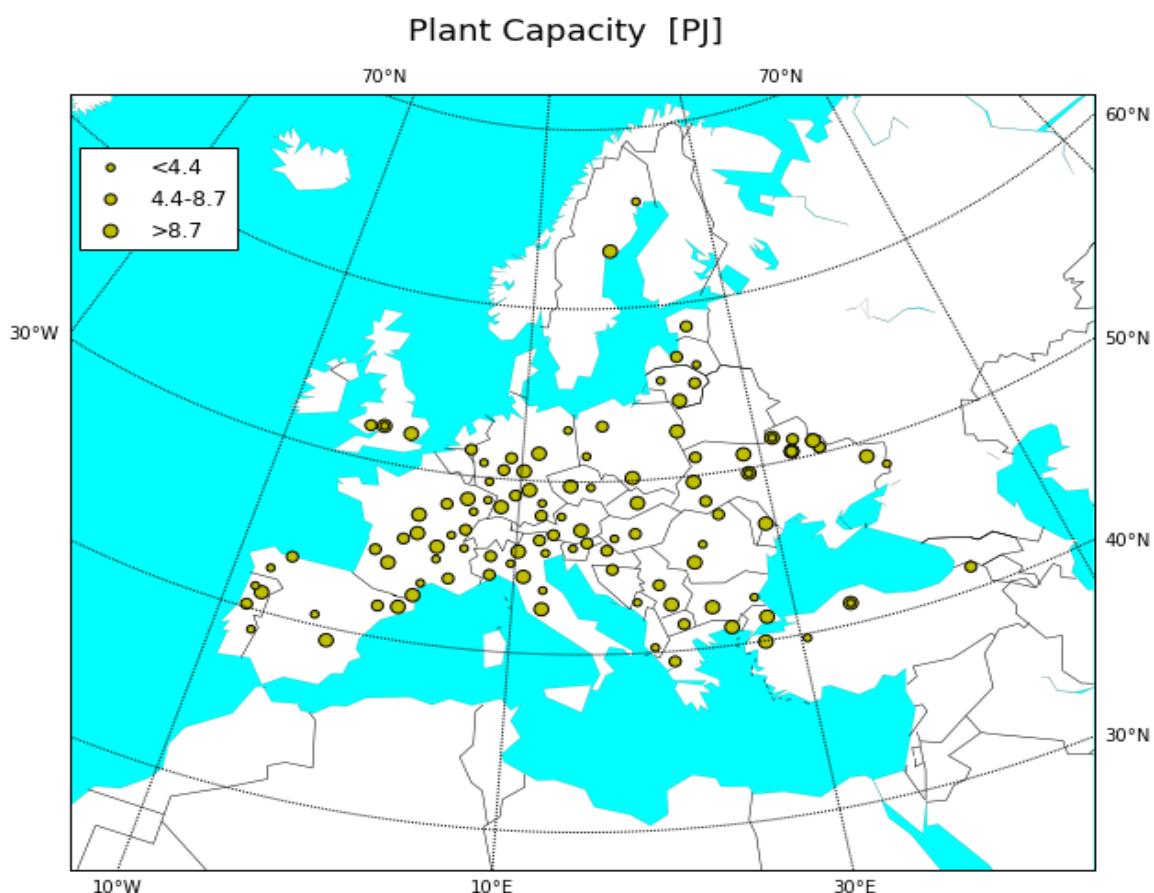


## Scenario #70

Feedstock: forest residuals  
Final product: biofuel

Biofuel support: 10 EUR/tCO<sub>2</sub>  
Fossil fuel cost: 1.5 EUR/GJ



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| Country | Total use of forest residues (PJ/year) |       |       |       |       |      |       |       |       |      |
|---------|--|-------|-------|-------|-------|------|-------|-------|-------|------|
|         | RM1                                    | RM2   | RM3   | RM4   | RM5   | RM6  | RM7   | RM8   | RM9   | RM10 |
| AL      | 1.61                                   | 0.39  | 0     | 0.86  | 0     | 0    | 0.96  | 0.18  | 0.24  | 0.16 |
| AT      | 0.57                                   | 11.18 | 0     | 2.17  | 0     | 0    | 1.07  | 6.83  | 2.36  | 1.12 |
| BE      | 0                                      | 0     | 0     | 0     | 0     | 0    | 0     | 0     | 0     | 0    |
| BA      | 1.15                                   | 0     | 0     | 0     | 0     | 0    | 1.12  | 0     | 1.08  | 0    |
| BG      | 3.62                                   | 0.75  | 0     | 0     | 0     | 0    | 4.67  | 0.69  | 1.97  | 2.31 |
| HR      | 2.02                                   | 0.2   | 1.1   | 0     | 0.47  | 0    | 1.38  | 0.1   | 0.74  | 0.06 |
| CY      | 0                                      | 0     | 0     | 0     | 0     | 0    | 0     | 0     | 0     | 0    |
| CZ      | 3.29                                   | 3.83  | 0     | 0     | 0     | 0    | 3.16  | 3.25  | 2.41  | 2.34 |
| DK      | 0.15                                   | 0.36  | 0     | 0     | 0     | 0    | 0.17  | 0.02  | 0.25  | 0.03 |
| EE      | 2.58                                   | 0.3   | 0     | 0     | 0     | 0    | 2.24  | 0.21  | 0.55  | 0.09 |
| FI      | 0.04                                   | 0.21  | 0     | 0     | 0     | 0    | 0.03  | 0.43  | 0.02  | 0.06 |
| FR      | 24.45                                  | 15.68 | 24.1  | 12.15 | 13.9  | 9.26 | 23.52 | 8.97  | 13.63 | 8.43 |
| DE      | 14.45                                  | 17.37 | 14.16 | 11.4  | 13.74 | 2.5  | 16.36 | 3.46  | 7.22  | 0.56 |
| GR      | 0.96                                   | 0.79  | 1.49  | 2.06  | 1.75  | 1.26 | 1.07  | 0.87  | 0.98  | 0.93 |
| HU      | 6.29                                   | 0.43  | 0     | 0     | 0     | 0    | 5.45  | 0.24  | 1.77  | 0.28 |
| IE      | 0.66                                   | 0.01  | 0     | 0     | 0     | 0    | 0.45  | 0     | 0.04  | 0    |
| IT      | 20.23                                  | 3.55  | 20.06 | 6.27  | 4.25  | 2.86 | 14.32 | 2.36  | 3.38  | 2.23 |
| KS      | 0.27                                   | 0.06  | 0     | 0     | 0     | 0    | 0.26  | 0.04  | 0.25  | 0.04 |
| LV      | 5.4                                    | 1.06  | 0     | 2.39  | 0     | 0    | 6.11  | 0.73  | 1.29  | 0.21 |
| LT      | 2.09                                   | 2.68  | 2.41  | 4.92  | 1.55  | 0.84 | 1.58  | 1.96  | 0.64  | 0.81 |
| LU      | 0                                      | 0     | 0     | 0     | 0     | 0    | 0     | 0     | 0     | 0    |
| MT      | 0                                      | 0     | 0     | 0     | 0     | 0    | 0     | 0     | 0     | 0    |
| MD      | 0.17                                   | 0.03  | 0     | 0     | 0     | 0    | 0.2   | 0.02  | 0.82  | 0.02 |
| ME      | 0.51                                   | 0.45  | 0     | 0     | 0     | 0    | 0.6   | 0.37  | 0.59  | 0.37 |
| NL      | 0.01                                   | 0     | 0     | 0.48  | 0     | 0    | 0.01  | 0     | 0.01  | 0.01 |
| PL      | 5.23                                   | 15.67 | 0     | 0     | 0     | 0    | 3.96  | 10.14 | 1.45  | 5.02 |
| PL      | 17.01                                  | 5.45  | 0     | 0     | 0     | 0    | 10.02 | 4.54  | 0.17  | 0.51 |
| RS      | 0.86                                   | 0.27  | 0.44  | 0.85  | 1.48  | 0.1  | 1.01  | 0.21  | 0.92  | 0.24 |
| RO      | 7.18                                   | 3.28  | 0     | 0.45  | 0     | 0    | 7.61  | 2.44  | 5.3   | 1.96 |
| SK      | 2.03                                   | 1.11  | 0     | 0     | 0     | 0    | 2.35  | 0.88  | 1.91  | 0.42 |
| SI      | 2.03                                   | 3.15  | 0     | 0     | 0     | 0    | 1.53  | 1.5   | 0.74  | 0.6  |
| ES      | 9.44                                   | 15.37 | 0     | 0     | 0     | 0    | 5.81  | 7.83  | 1.88  | 5.34 |
| SE      | 0.06                                   | 8.46  | 0     | 0     | 0     | 0    | 0.17  | 4.19  | 0.46  | 0.44 |
| MK      | 0.46                                   | 0.04  | 0     | 0.03  | 0     | 0    | 0.49  | 0.04  | 0.45  | 0.04 |
| TR      | 10.63                                  | 30.74 | 0     | 0     | 0     | 0    | 4.05  | 14.98 | 1.7   | 1.27 |
| UK      | 1.98                                   | 0.67  | 4.59  | 2.16  | 1.78  | 0.25 | 3.58  | 0.38  | 1.53  | 0.11 |
| UA      | 3.98                                   | 10.1  | 0.01  | 17.84 | 12.5  | 0    | 3.01  | 5.2   | 4.08  | 1.66 |

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| Export of forest residues (PJ/year) |      |       |     |     |     |     |      |      |      |      |
|-------------------------------------|------|-------|-----|-----|-----|-----|------|------|------|------|
| Country                             | RM1  | RM2   | RM3 | RM4 | RM5 | RM6 | RM7  | RM8  | RM9  | RM10 |
| AL                                  | 0    | 0     | 0   | 0   | 0   | 0   | 0    | 0    | 0    | 0    |
| AT                                  | 0    | 0     | 0   | 0   | 0   | 0   | 0    | 0.13 | 0    | 0    |
| BE                                  | 0    | 0     | 0   | 0   | 0   | 0   | 0    | 0    | 0    | 0    |
| BA                                  | 0    | 0     | 0   | 0   | 0   | 0   | 0    | 0    | 0    | 0    |
| BG                                  | 0    | 0     | 0   | 0   | 0   | 0   | 0    | 0.07 | 0    | 0    |
| HR                                  | 0    | 0     | 0   | 0   | 0   | 0   | 0    | 0    | 0    | 0    |
| CY                                  | 0    | 0     | 0   | 0   | 0   | 0   | 0    | 0    | 0    | 0    |
| CZ                                  | 0    | 0.23  | 0   | 0   | 0   | 0   | 0.1  | 0.11 | 0.51 | 0    |
| DK                                  | 0.15 | 0.36  | 0   | 0   | 0   | 0   | 0.17 | 0.02 | 0.25 | 0.03 |
| EE                                  | 0.07 | 0.01  | 0   | 0   | 0   | 0   | 0.06 | 0.01 | 0.01 | 0    |
| FI                                  | 0.04 | 0.21  | 0   | 0   | 0   | 0   | 0.03 | 0.43 | 0.02 | 0.06 |
| FR                                  | 3.73 | 0.51  | 0   | 0   | 0   | 0   | 3.38 | 0.48 | 1.5  | 0.51 |
| DE                                  | 0    | 0     | 0   | 0   | 0   | 0   | 0    | 0    | 0    | 0    |
| GR                                  | 0    | 0     | 0   | 0   | 0   | 0   | 0    | 0    | 0    | 0    |
| HU                                  | 0    | 0     | 0   | 0   | 0   | 0   | 0    | 0    | 0    | 0    |
| IE                                  | 0.66 | 0.01  | 0   | 0   | 0   | 0   | 0.45 | 0    | 0.04 | 0    |
| IT                                  | 1.23 | 0     | 0   | 0   | 0   | 0   | 0.74 | 0.3  | 0.25 | 0.23 |
| KS                                  | 0    | 0     | 0   | 0   | 0   | 0   | 0    | 0    | 0    | 0    |
| LV                                  | 0.18 | 0.04  | 0   | 0   | 0   | 0   | 0.79 | 0.1  | 0.17 | 0.03 |
| LT                                  | 0    | 0     | 0   | 0   | 0   | 0   | 0.06 | 0.1  | 0.03 | 0.04 |
| LU                                  | 0    | 0     | 0   | 0   | 0   | 0   | 0    | 0    | 0    | 0    |
| MT                                  | 0    | 0     | 0   | 0   | 0   | 0   | 0    | 0    | 0    | 0    |
| MD                                  | 0    | 0     | 0   | 0   | 0   | 0   | 0.01 | 0    | 0.04 | 0    |
| ME                                  | 0    | 0     | 0   | 0   | 0   | 0   | 0.08 | 0.05 | 0.08 | 0.05 |
| NL                                  | 0.01 | 0     | 0   | 0   | 0   | 0   | 0.01 | 0    | 0.01 | 0.01 |
| PL                                  | 0.82 | 2.14  | 0   | 0   | 0   | 0   | 0.95 | 2.35 | 0.27 | 1.09 |
| PL                                  | 1.77 | 0     | 0   | 0   | 0   | 0   | 2.14 | 1.08 | 0.03 | 0.11 |
| RS                                  | 0    | 0     | 0   | 0   | 0   | 0   | 0.14 | 0.02 | 0.12 | 0.03 |
| RO                                  | 0    | 0     | 0   | 0   | 0   | 0   | 0.99 | 0.3  | 0.69 | 0.24 |
| SK                                  | 0    | 0     | 0   | 0   | 0   | 0   | 0.08 | 0.03 | 0.06 | 0.01 |
| SI                                  | 2.03 | 3.15  | 0   | 0   | 0   | 0   | 1.53 | 1.5  | 0.74 | 0.6  |
| ES                                  | 0.08 | 0.03  | 0   | 0   | 0   | 0   | 0.07 | 0.24 | 0.02 | 0.1  |
| SE                                  | 0.06 | 0.2   | 0   | 0   | 0   | 0   | 0.03 | 0.11 | 0.03 | 0.11 |
| MK                                  | 0    | 0     | 0   | 0   | 0   | 0   | 0    | 0    | 0    | 0    |
| TR                                  | 3.97 | 11.95 | 0   | 0   | 0   | 0   | 1.8  | 0.81 | 1.44 | 0.07 |
| UK                                  | 0    | 0     | 0   | 0   | 0   | 0   | 0    | 0    | 0    | 0    |
| UA                                  | 0    | 0     | 0   | 0   | 0   | 0   | 0    | 0    | 0    | 0    |

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| Import of forest residues (PJ/year) |      |      |     |     |     |     |      |      |      |      |
|-------------------------------------|------|------|-----|-----|-----|-----|------|------|------|------|
| Country                             | RM1  | RM2  | RM3 | RM4 | RM5 | RM6 | RM7  | RM8  | RM9  | RM10 |
| AL                                  | 4.2  | 0.06 | 0   | 0   | 0   | 0   | 0    | 0    | 0    | 0    |
| AT                                  | 0    | 0    | 0   | 0   | 0   | 0   | 0    | 0    | 0    | 0    |
| BE                                  | 0    | 0    | 0   | 0   | 0   | 0   | 0    | 0    | 0    | 0    |
| BA                                  | 2.72 | 0    | 0   | 0   | 0   | 0   | 0    | 0    | 0    | 0    |
| BG                                  | 0    | 0    | 0   | 0   | 0   | 0   | 0    | 0    | 0    | 0    |
| HR                                  | 0    | 0    | 0   | 0   | 0   | 0   | 0    | 0    | 0    | 0    |
| CY                                  | 0    | 0    | 0   | 0   | 0   | 0   | 0    | 0    | 0    | 0    |
| CZ                                  | 0    | 0    | 0   | 0   | 0   | 0   | 0    | 0    | 0    | 0    |
| DK                                  | 0    | 0    | 0   | 0   | 0   | 0   | 0    | 0    | 0    | 0    |
| EE                                  | 0    | 0    | 0   | 0   | 0   | 0   | 2.85 | 0    | 0    | 0    |
| FI                                  | 0    | 0    | 0   | 0   | 0   | 0   | 0    | 0    | 0    | 0    |
| FR                                  | 0    | 0    | 0   | 0   | 0   | 0   | 0    | 0    | 0    | 0    |
| DE                                  | 0    | 0    | 0   | 0   | 0   | 0   | 0    | 0    | 0    | 0    |
| GR                                  | 0    | 0    | 0   | 0   | 0   | 0   | 0    | 0    | 0    | 0    |
| HU                                  | 0    | 0    | 0   | 0   | 0   | 0   | 0    | 0    | 0    | 0    |
| IE                                  | 0    | 0    | 0   | 0   | 0   | 0   | 0    | 0    | 0    | 0    |
| IT                                  | 0    | 0    | 0   | 0   | 0   | 0   | 0    | 0    | 0    | 0    |
| KS                                  | 0    | 7.36 | 0   | 0   | 0   | 0   | 0    | 0.37 | 0    | 0.03 |
| LV                                  | 0    | 0    | 0   | 0   | 0   | 0   | 0    | 0    | 0    | 0    |
| LT                                  | 0    | 0    | 0   | 0   | 0   | 0   | 1.25 | 0    | 0    | 0    |
| LU                                  | 0    | 0    | 0   | 0   | 0   | 0   | 0    | 0    | 0    | 0    |
| MT                                  | 0    | 0    | 0   | 0   | 0   | 0   | 0    | 0    | 0    | 0    |
| MD                                  | 0    | 0    | 0   | 0   | 0   | 0   | 7.45 | 0    | 0    | 0    |
| ME                                  | 0.77 | 3.15 | 0   | 0   | 0   | 0   | 0    | 1.5  | 0    | 0.6  |
| NL                                  | 0    | 0    | 0   | 0   | 0   | 0   | 1.88 | 0    | 6.31 | 0    |
| PL                                  | 0    | 0    | 0   | 0   | 0   | 0   | 0    | 0    | 0    | 0    |
| PL                                  | 0    | 0    | 0   | 0   | 0   | 0   | 0    | 0    | 0    | 0    |
| RS                                  | 0    | 0    | 0   | 0   | 0   | 0   | 0    | 0    | 0    | 0    |
| RO                                  | 0    | 0    | 0   | 0   | 0   | 0   | 0    | 0    | 0    | 0    |
| SK                                  | 0    | 0    | 0   | 0   | 0   | 0   | 0.16 | 0    | 0    | 0    |
| SI                                  | 0    | 8.25 | 0   | 0   | 0   | 0   | 0    | 6.38 | 0.01 | 2.69 |
| ES                                  | 0    | 0    | 0   | 0   | 0   | 0   | 0    | 0    | 0    | 0    |
| SE                                  | 0    | 0    | 0   | 0   | 0   | 0   | 0    | 0    | 0    | 0    |
| MK                                  | 7.11 | 0    | 0   | 0   | 0   | 0   | 0    | 0    | 0    | 0    |
| TR                                  | 0    | 0    | 0   | 0   | 0   | 0   | 0    | 0    | 0    | 0    |
| UK                                  | 0    | 0    | 0   | 0   | 0   | 0   | 0    | 0    | 0    | 0    |
| UA                                  | 0    | 0    | 0   | 0   | 0   | 0   | 0    | 0    | 0    | 0    |

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Note that some countries export all biofuel domestically produced, which is why their emission avoided is zero. Biofuel trades are not presented as the emission avoided reflect this effect

| Country | Methanol (PJ) | Ethanol (PJ) | FTD (PJ) | Emission avoided (MtonCO2) |
|---------|---------------|--------------|----------|----------------------------|
| AL      | 10.4          | 0            | 0        | 0                          |
| AT      | 30.17         | 0            | 0        | 0                          |
| BE      | 0             | 0            | 0        | 0                          |
| BA      | 7.28          | 0            | 0        | 0                          |
| BG      | 16.72         | 0            | 0        | 0                          |
| HR      | 7.28          | 0            | 0        | 0                          |
| CY      | 0             | 0            | 0        | 0                          |
| CZ      | 20.8          | 0            | 0        | 0                          |
| DK      | 0             | 0            | 0        | 0                          |
| EE      | 10.4          | 0            | 0        | 0                          |
| FI      | 0             | 0            | 0        | 0                          |
| FR      | 172.77        | 0            | 0        | 0.53                       |
| DE      | 121.46        | 0            | 0        | 1.15                       |
| GR      | 14.58         | 0            | 0        | 0.19                       |
| HU      | 17.36         | 0            | 0        | 0                          |
| IE      | 0             | 0            | 0        | 0                          |
| IT      | 92.13         | 0            | 0        | 0.74                       |
| KS      | 10.4          | 0            | 0        | 0                          |
| LV      | 19.04         | 0            | 0        | 0                          |
| LT      | 24.59         | 0            | 0        | 0.15                       |
| LU      | 0             | 0            | 0        | 0                          |
| MT      | 0             | 0            | 0        | 0                          |
| MD      | 10.4          | 0            | 0        | 0                          |
| ME      | 10.4          | 0            | 0        | 0                          |
| NL      | 10.4          | 0            | 0        | 0                          |
| PL      | 40.62         | 0            | 0        | 0                          |
| PL      | 39.08         | 0            | 0        | 0                          |
| RS      | 7.28          | 0            | 0        | 0                          |
| RO      | 31.2          | 0            | 0        | 0                          |
| SK      | 10.4          | 0            | 0        | 0                          |
| SI      | 20.8          | 0            | 0        | 0                          |
| ES      | 54.15         | 0            | 0        | 0                          |
| SE      | 15.9          | 0            | 0        | 0                          |
| MK      | 10.4          | 0            | 0        | 0                          |
| TR      | 52            | 0            | 0        | 0                          |
| UK      | 10.22         | 0            | 0        | 36.22                      |
| UA      | 70.06         | 0            | 0        | 0.88                       |

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| <b>Legend: Forest based raw materials</b> |  |
|---|--|
| RM1                                       | Stumps from final fellings originating from nonconifer trees           |
| RM2                                       | Stumps from final fellings originating from conifer trees              |
| RM3                                       | Stemwood from final fellings originating from nonconifer trees         |
| RM4                                       | Stemwood from final fellings originating from conifer trees            |
| RM5                                       | Stemwood from thinnings originating from nonconifer trees              |
| RM6                                       | Stemwood from thinnings originating from conifer trees                 |
| RM7                                       | Logging residues from final fellings originating from nonconifer trees |
| RM8                                       | Logging residues from final fellings originating from conifer trees    |
| RM9                                       | Logging residues from thinnings from nonconifer trees                  |
| RM10                                      | Logging residues from thinnings from conifer trees                     |