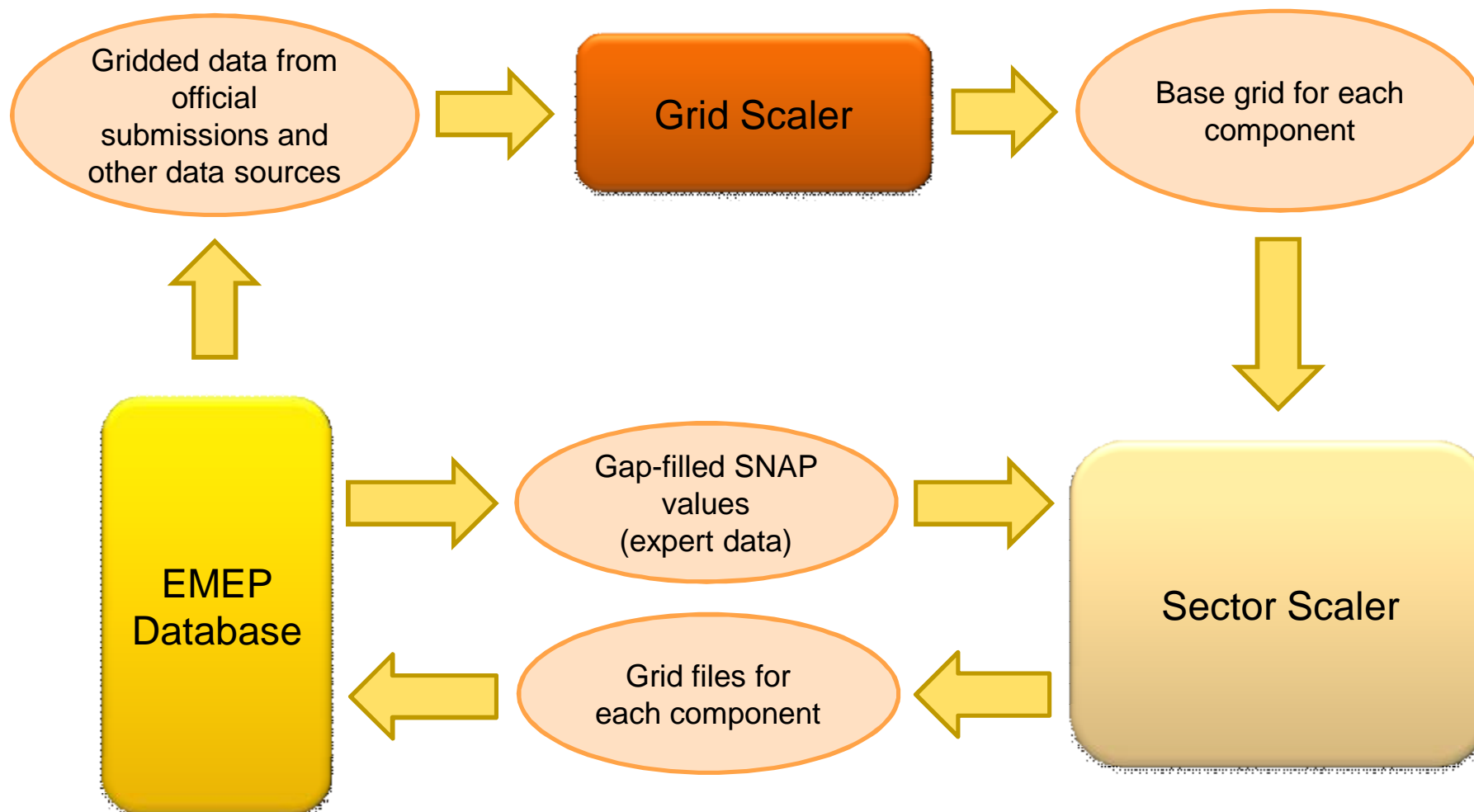
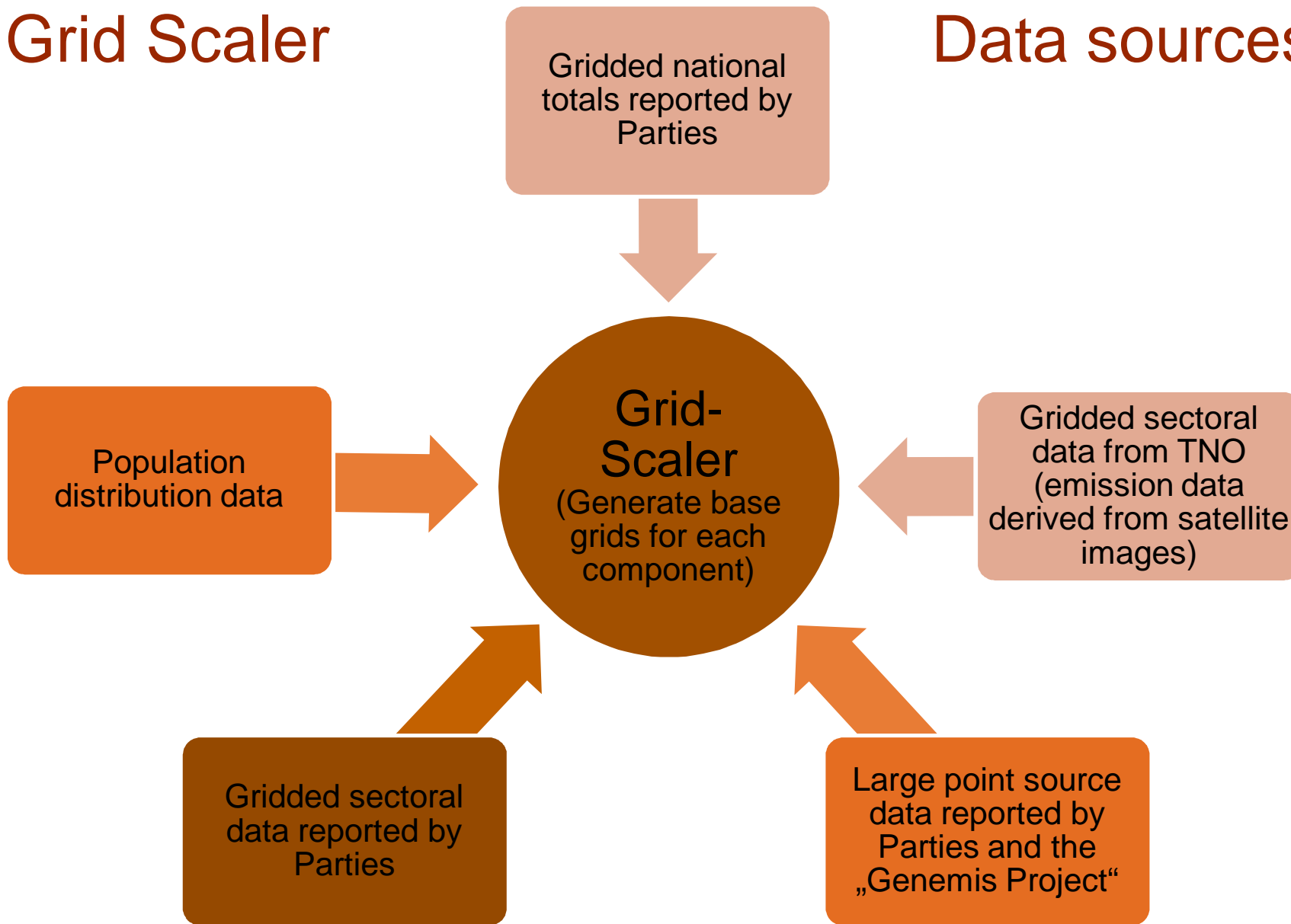


Gridding process



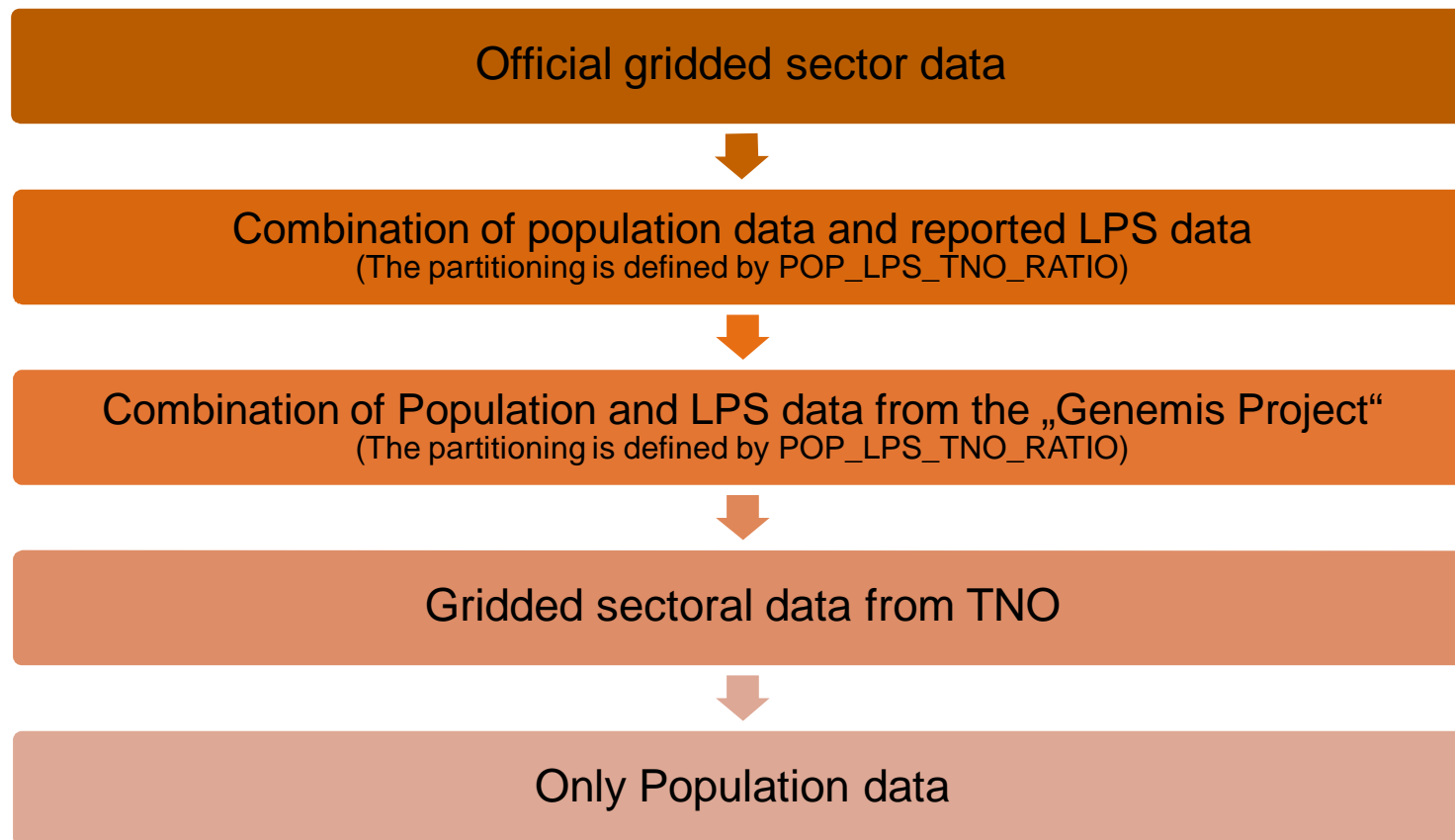
Grid Scaler

Data sources





Grid Scaler – Scaling order





Grid Scaler – POP_LPS_TNO_RATIO

- Sector 1 à only LPS data
- Sector 2 à only Population data
- Sector 3 à 50% Population data / 50% LPS data
- Sector 4 à only LPS data
- Sector 5 à only gridded sectoral data from TNO
- Sector 6 à only Population data
- Sector 7 à NOx distribution from official gridded sectoral data OR gridded sectoral data from TNO
- Sector 8 à like Sector 7
- Sector 9 à is defined by the „S9_GRID_COUNTRY_RATIO“ (see next slide)
- Sector 10 à NH3 distribution from official gridded national total data OR gridded sectoral data from TNO



Grid Scaler – S9_GRID_COUNTRY_RATIO

- n Different weightings of population-, LPS- and TNO- data for each country, whereas
 - .. The TNO value defines the percentage of agriculture related waste
 - .. The population value defines the percentage of urban population related waste
 - .. The LPS value defines the percentage of flaring/oil related waste

Grid Scaler – S9_GRID_COUNTRY_RATIO

Definition for each country:

- à Column 1: Country
- à Column 2: TNO data weighting
- à Column 3: Population data weighting
- à Column 4: LPS data weighting

AL	75.00%	25.00%	0.00%
AM	50.00%	50.00%	0.00%
ASI	50.00%	50.00%	0.00%
AT	0.00%	100.00%	0.00%
ATL	0.00%	0.00%	0.00%
AZ	25.00%	20.00%	55.00%
BA	50.00%	50.00%	0.00%
BAS	0.00%	0.00%	0.00%
BE	0.00%	100.00%	0.00%
DE	75.00%	25.00%	0.00%
BLG	0.00%	0.00%	0.00%
DY	100.00%	0.00%	0.00%
CH	0.00%	100.00%	0.00%
CY	75.00%	25.00%	0.00%
CZ	100.00%	0.00%	0.00%
DE	0.00%	100.00%	0.00%
DK	25.00%	75.00%	0.00%

EE	100.00%	0.00%	0.00%
ES	50.00%	50.00%	0.00%
FI	50.00%	50.00%	0.00%
FR	0.00%	100.00%	0.00%
GB	0.00%	90.00%	10.00%
GE	50.00%	50.00%	0.00%
GR	75.00%	25.00%	0.00%
HR	75.00%	25.00%	0.00%
HU	60.00%	40.00%	0.00%
IE	0.00%	100.00%	0.00%
IS	0.00%	100.00%	0.00%
IT	0.00%	100.00%	0.00%
KZ	100.00%	0.00%	0.00%
LT	100.00%	0.00%	0.00%
LU	0.00%	100.00%	0.00%
LV	100.00%	0.00%	0.00%
MD	100.00%	0.00%	0.00%

ME	75.00%	25.00%	0.00%
MED	0.00%	0.00%	0.00%
MK	100.00%	0.00%	0.00%
MT	75.00%	25.00%	0.00%
NAT	0.00%	0.00%	0.00%
NL	0.00%	100.00%	0.00%
NO	0.00%	0.00%	100.00%
NOA	0.00%	0.00%	0.00%
NOS	0.00%	0.00%	0.00%
PL	25.00%	75.00%	0.00%
PT	25.00%	75.00%	0.00%
RO	75.00%	25.00%	0.00%
RS	75.00%	25.00%	0.00%
RU	75.00%	25.00%	0.00%
SE	0.00%	100.00%	0.00%
SI	60.00%	40.00%	0.00%
SK	50.00%	50.00%	0.00%
TR	25.00%	75.00%	0.00%
UA	100.00%	0.00%	0.00%
VOL	0.00%	0.00%	0.00%

Grid Scaler – Result (Base grid)

- n The result is a base grid for each component (standardised to 10^9 per sector and country)

```
# Format: cc (Country code), i (EMEP x coordinate), j (EMEP y coordinate), S1-S11
1 90 43 0.00 0.00 30255.41 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
1 90 44 4531.91 4532.07 3835.12 4532.17 4538.76 4532.10 4532.17 6063.11 4531.93 136.14 0.00
1 90 45 29055.57 29056.99 24588.07 29056.90 29072.62 29056.93 29056.90 26545.87 29056.84 713.20 0.00
1 90 46 822.04 822.88 696.29 822.69 858.68 822.78 822.75 2253.72 822.80 2756.64 0.00
1 91 44 41370.88 41372.30 35009.42 41372.47 41339.55 41372.22 41372.43 58283.48 41372.45 50778.89 0.00
1 91 45 36658.67 36658.84 31020.77 36658.74 36678.12 36658.80 36658.85 52079.67 36658.98 37127.31 0.00
1 91 46 10872.92 10872.61 9200.45 10872.61 10917.57 10872.65 10872.62 17448.90 10872.62 33631.56 0.00
1 92 43 67391.94 67391.61 87954.63 67391.85 67345.44 67391.76 67391.64 45978.38 67391.84 58765.50 0.00
1 92 44 80990.73 80991.76 68535.51 80991.85 80961.73 80991.55 80991.59 49581.83 80991.64 115360.80 0.00
1 92 45 46232.83 46231.21 40969.70 46231.29 46246.32 46231.39 46231.29 50705.59 46231.36 70758.13 0.00
1 92 46 11474.93 11474.28 9709.69 11474.21 11530.91 11474.41 11474.14 12317.99 11474.42 20766.80 0.00
1 93 41 0.00 0.00 0.00 0.00 0.00 0.00 0.00 29.83 0.00 0.00 0.00
1 93 42 36753.40 36754.79 31101.95 36754.73 36800.79 36754.70 36754.57 30974.71 36754.60 46939.62 0.00
1 93 43 130991.49 130990.21 110844.09 130989.96 131010.79 130990.06 130990.19 67600.89 130989.97 119667.15 0.00
1 93 44 101294.18 101294.24 146226.10 101294.11 101324.83 101294.21 101294.23 151761.49 101294.22 78902.11 0.00
1 93 45 19264.44 19264.05 16301.21 19264.12 19259.08 19263.95 19264.09 17103.12 19264.13 30466.33 0.00
1 94 41 4703.04 4703.15 3979.82 4703.31 4661.43 4703.26 4703.26 5912.86 4703.11 4693.96 0.00
1 94 42 76688.01 76688.12 95148.91 76688.15 76668.30 76688.09 76688.11 68533.16 76688.06 131431.26 0.00
1 94 43 83285.71 83284.31 70475.38 83284.43 83292.44 83284.27 83284.47 71263.14 83284.52 37551.69 0.00
1 94 44 50611.95 50610.89 42827.13 50611.00 50539.74 50611.06 50611.00 44463.30 50610.83 37074.91 0.00
1 95 41 1897.72 1897.73 1605.84 1897.74 1840.04 1897.69 1897.69 1002.43 1897.69 4693.96 0.00
1 95 42 40912.49 40913.48 34620.94 40913.35 40848.87 40913.35 40913.33 56124.31 40913.41 51633.58 0.00
1 95 43 34479.81 34480.36 29177.46 34480.39 34470.07 34480.39 34480.32 50655.41 34480.44 0.00 0.00
1 95 44 53823.70 53824.89 45546.73 53824.87 53851.82 53825.00 53824.93 65325.96 53824.81 7193.37 0.00
1 95 45 1411.83 1412.20 1194.93 1412.12 1349.36 1412.15 1412.24 1215.12 1412.24 4608.90 0.00
1 96 41 4605.25 4604.34 3896.13 4604.28 4661.43 4604.50 4604.39 3758.09 4604.48 13017.10 0.00
1 96 42 22518.98 22517.48 19054.34 22517.52 22571.15 22517.59 22517.57 28117.66 22517.55 38933.26 0.00
1 96 43 6949.13 6948.33 5879.61 6948.12 6992.15 6948.35 6948.28 14622.33 6948.18 0.00 0.00
1 96 44 406.44 406.86 344.36 407.00 368.01 406.78 406.94 277.65 406.89 2397.82 0.00
2 69 41 343 20 1915 70 343 20 5601 51 1450 75 3678 06 1226 85 1226 85 2717 75 783 37 0 00
```

Sector Scaler

- n Allocate the emission values from the gap-filling process regarding the base grids
- n The result are grid files for each component

```
# Format: cc (Country code), i (EMEP x coordinate), j (EMEP y coordinate), S1-S11
1 90 43 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
1 90 44 2.79 285.11 0.00 0.00 0.00 0.00 189.63 6.58 19.03 0.00 0.00
1 90 45 17.87 1827.96 0.00 0.00 0.00 0.00 1215.78 28.82 122.04 0.00 0.00
1 90 46 0.51 51.77 0.00 0.00 0.00 0.00 34.43 2.45 3.46 0.00 0.00
1 91 44 25.44 2602.70 0.00 0.00 0.00 0.00 1731.08 63.28 173.76 0.00 0.00
1 91 45 22.55 2306.18 0.00 0.00 0.00 0.00 1533.86 56.55 153.97 0.00 0.00
1 91 46 6.69 683.99 0.00 0.00 0.00 0.00 454.93 18.95 45.67 0.00 0.00
1 92 43 41.45 4239.56 0.00 0.00 0.00 0.00 2819.76 49.92 283.05 0.00 0.00
1 92 44 49.81 5095.14 0.00 0.00 0.00 0.00 3388.81 53.84 340.16 0.00 0.00
1 92 45 28.43 2908.37 0.00 0.00 0.00 0.00 1934.38 55.06 194.17 0.00 0.00
1 92 46 7.06 721.84 0.00 0.00 0.00 0.00 480.09 13.37 48.19 0.00 0.00
1 93 41 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.03 0.00 0.00 0.00
1 93 42 22.60 2312.22 0.00 0.00 0.00 0.00 1537.86 33.63 154.37 0.00 0.00
1 93 43 80.56 8240.51 0.00 0.00 0.00 0.00 5480.82 73.40 550.16 0.00 0.00
1 93 44 62.30 6372.35 0.00 0.00 0.00 0.00 4238.30 164.78 425.44 0.00 0.00
1 93 45 11.85 1211.89 0.00 0.00 0.00 0.00 806.04 18.57 80.91 0.00 0.00
1 94 41 2.89 295.87 0.00 0.00 0.00 0.00 196.79 6.42 19.75 0.00 0.00
1 94 42 47.16 4824.40 0.00 0.00 0.00 0.00 3208.74 74.41 322.09 0.00 0.00
1 94 43 51.22 5239.36 0.00 0.00 0.00 0.00 3484.74 77.38 349.79 0.00 0.00
1 94 44 31.13 3183.90 0.00 0.00 0.00 0.00 2117.64 48.28 212.57 0.00 0.00
1 95 41 1.17 119.38 0.00 0.00 0.00 0.00 79.40 1.09 7.97 0.00 0.00
1 95 42 25.16 2573.84 0.00 0.00 0.00 0.00 1711.87 60.94 171.84 0.00 0.00
1 95 43 21.21 2169.14 0.00 0.00 0.00 0.00 1442.71 55.00 144.82 0.00 0.00
```