Social Welfare Report
02-12 / 2014*

** This report contains welfare indicators for the NWE area as of the NWE go-live in February. The report for January, containing CWE welfare indicators only, has been published separately.*

February 2014

- Additional Social welfare in the NWE area that could be gained with no network constraints in CWE:

11,3 M€

Social welfare = Producer surplus + Consumer surplus + Congestion rent

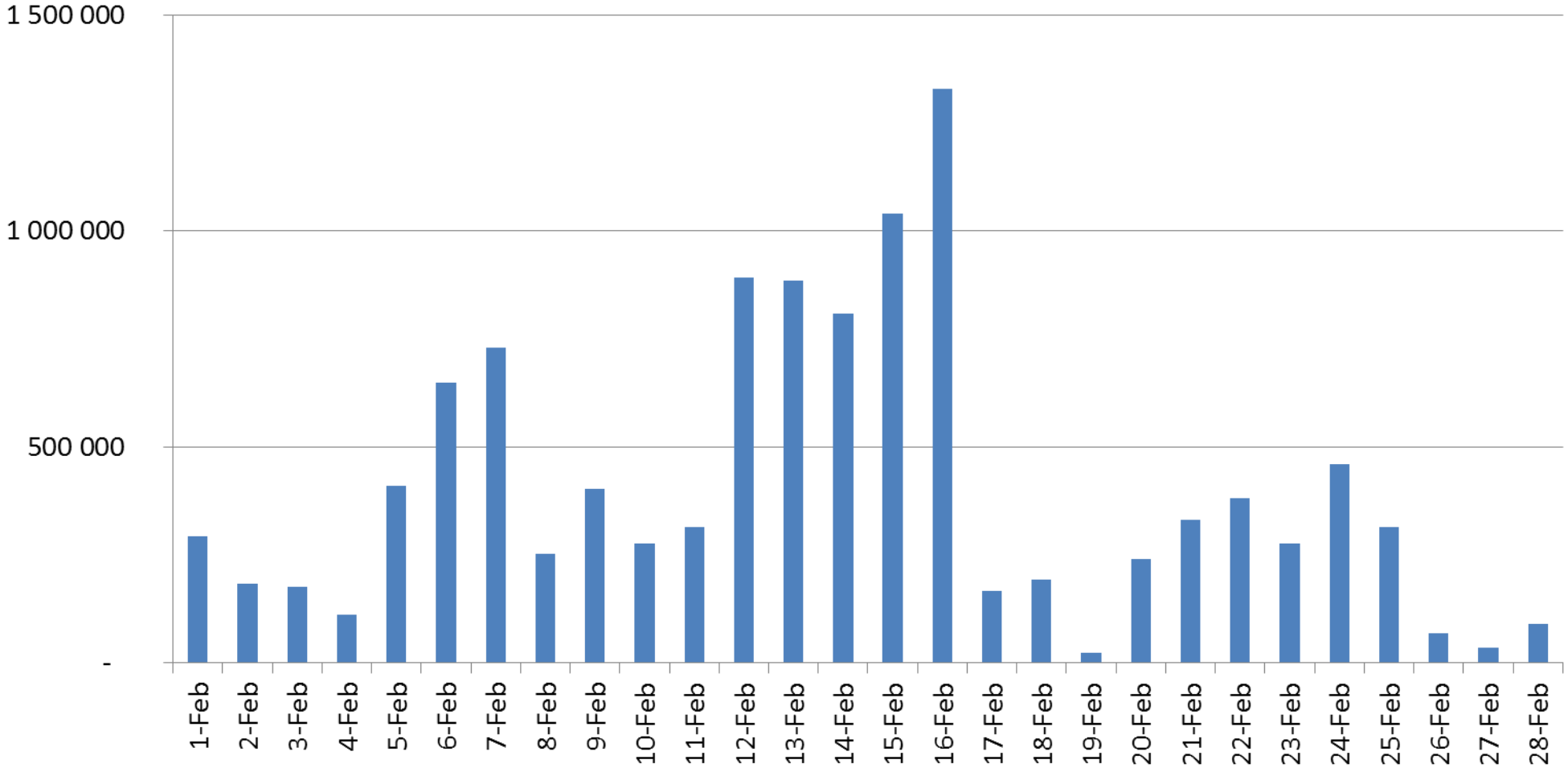
Producer surplus	62,5 M€
Consumer surplus	-31,1 M€
Congestion Rent	-20,1 M€

NB: Producer surplus, Consumer surplus and Congestion Rent are calculated as such:
Sum of daily (Value with ATC=∞) - (Historical value)
The daily values being a Sum of hourly values.

In single hours the producer/consumer gain can be positive or negative. The highlighted value presents the sum of all hours of the respective month.

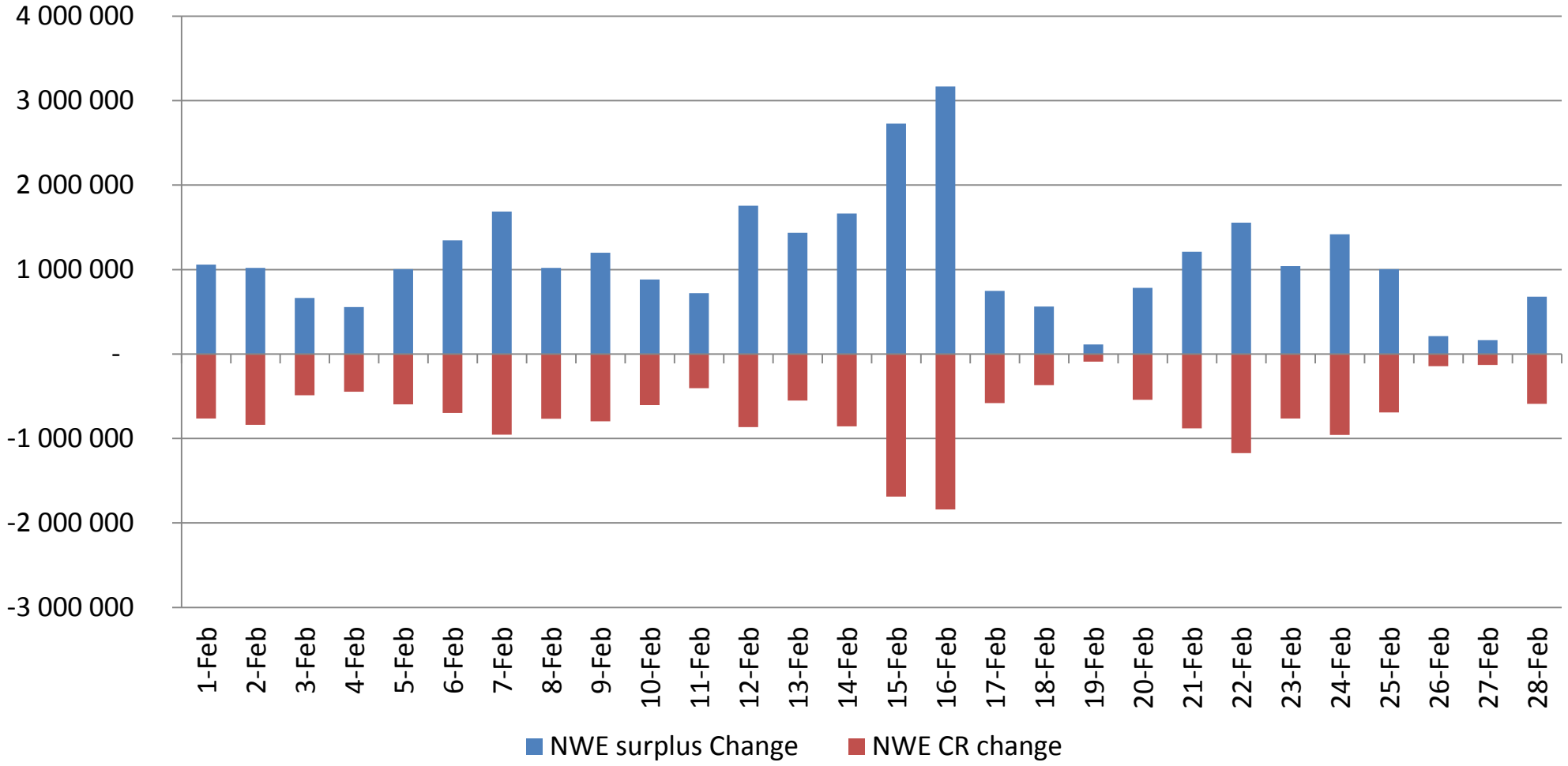
February 2014

Evolution of social welfare in NWE area that could be gained with no network constraints in CWE



February 2014

Split of social welfare gain in surplus and congestion rent in the NWE area



March 2014

- Additional Social welfare in the NWE area that could be gained with no network constraints in CWE:

13,4 M€

Social welfare = Producer surplus + Consumer surplus + Congestion rent

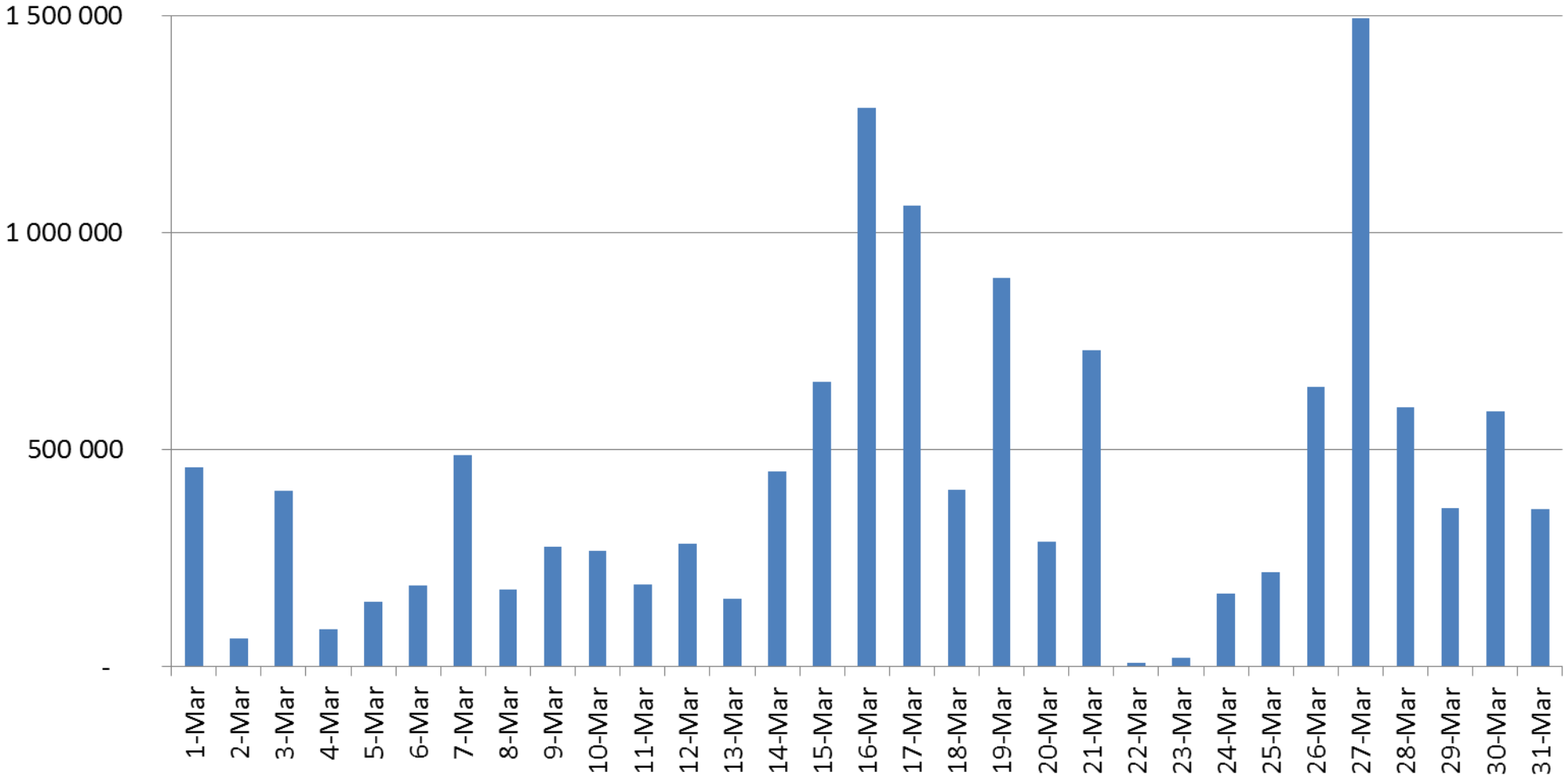
Producer surplus	62,8 M€
Consumer surplus	-25,1 M€
Congestion Rent	-24,3 M€

NB: Producer surplus, Consumer surplus and Congestion Rent are calculated as such:
Sum of daily (Value with ATC=∞) - (Historical value)
The daily values being a Sum of hourly values.

In single hours the producer/consumer gain can be positive or negative. The highlighted value presents the sum of all hours of the respective month.

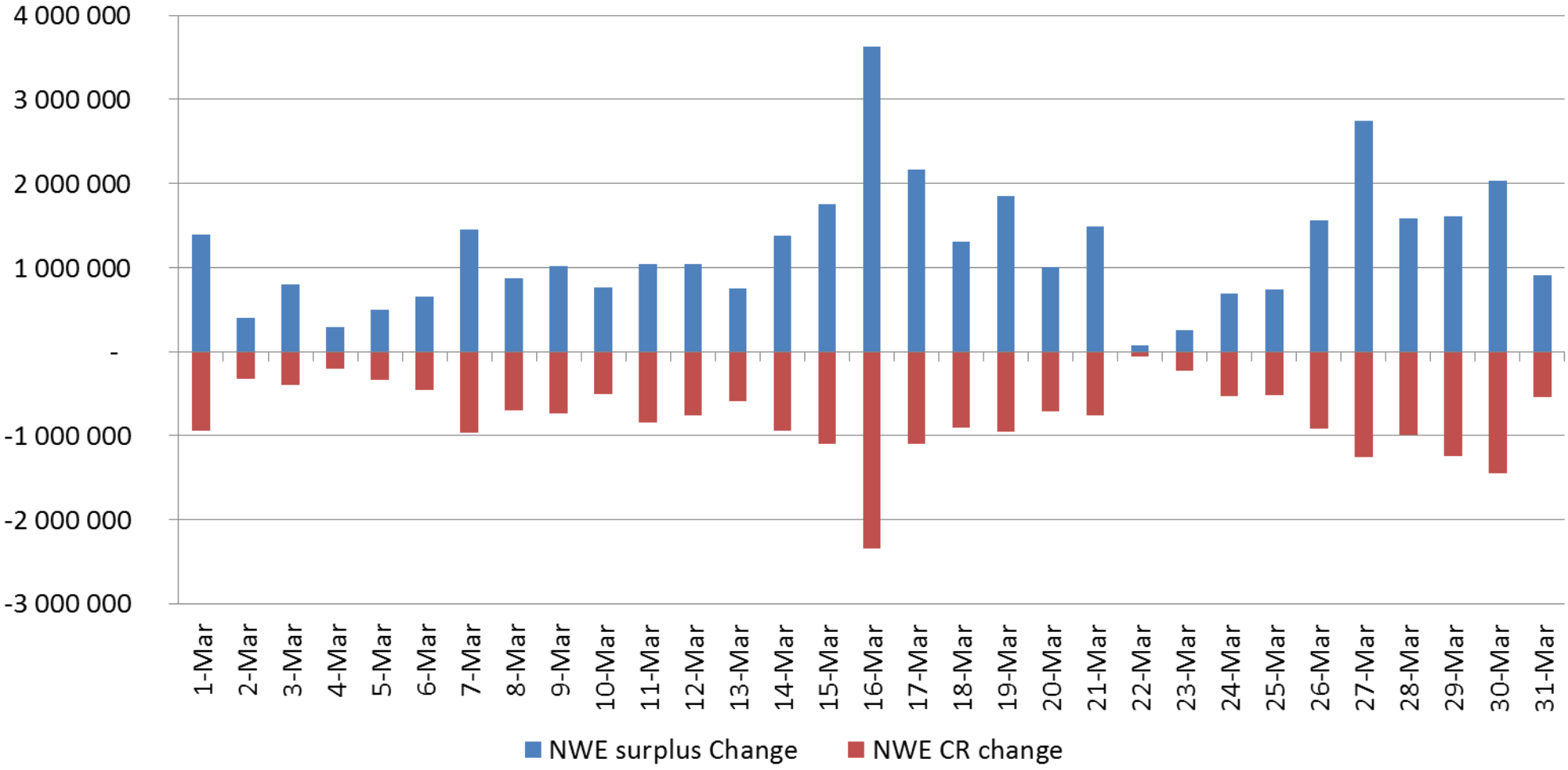
March 2014

Evolution of social welfare in NWE area that could be gained with no network constraints in CWE



March 2014

Split of social welfare gain in surplus and congestion rent in the NWE area



April 2014

- Additional Social welfare in the NWE area that could be gained with no network constraints in CWE:

12,1 M€

Social welfare = Producer surplus + Consumer surplus + Congestion rent

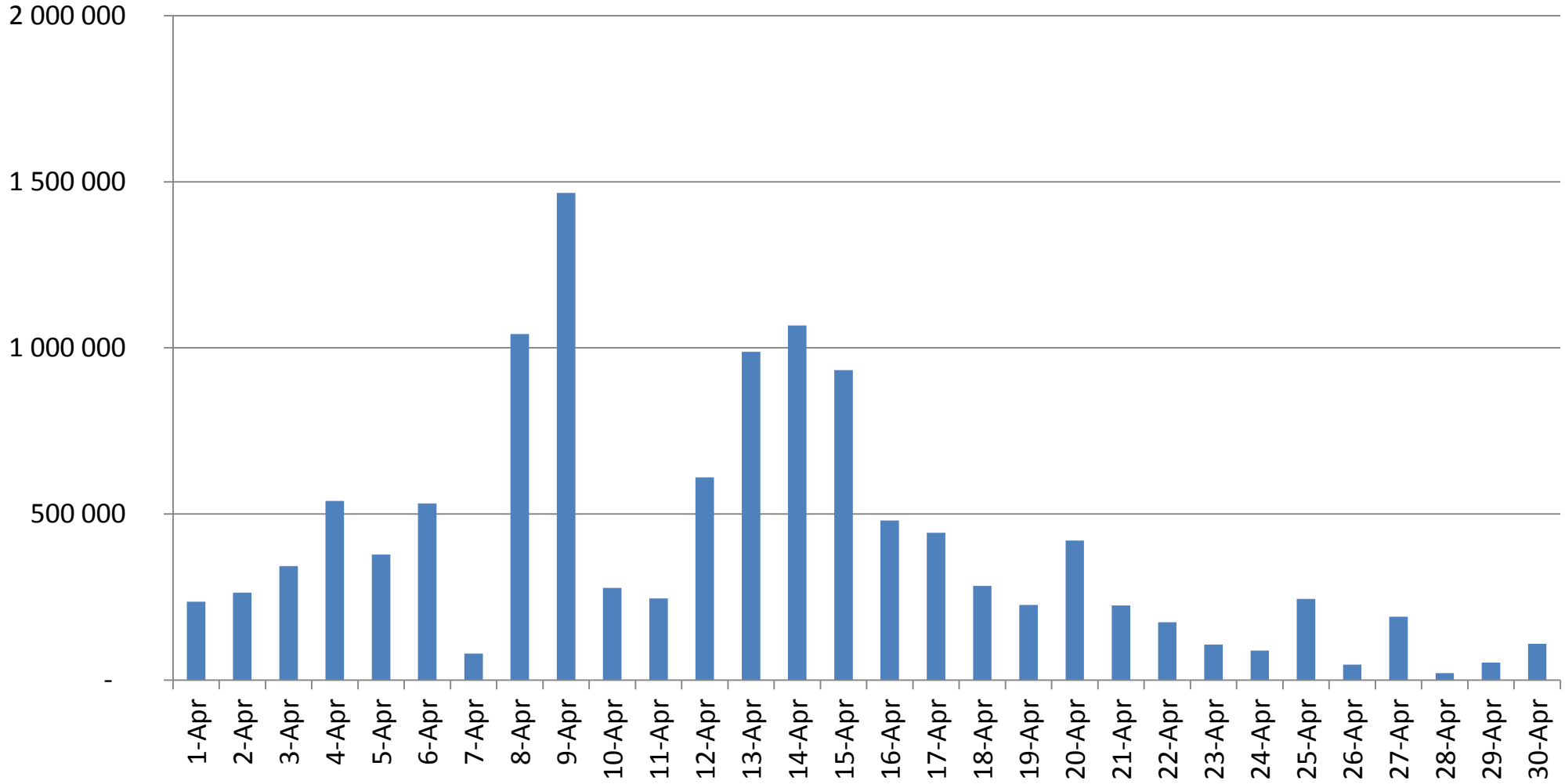
Producer surplus	49,1 M€
Consumer surplus	-14,2 M€
Congestion Rent	-22,9 M€

NB: Producer surplus, Consumer surplus and Congestion Rent are calculated as such:
Sum of daily (Value with ATC=∞) - (Historical value)
The daily values being a Sum of hourly values.

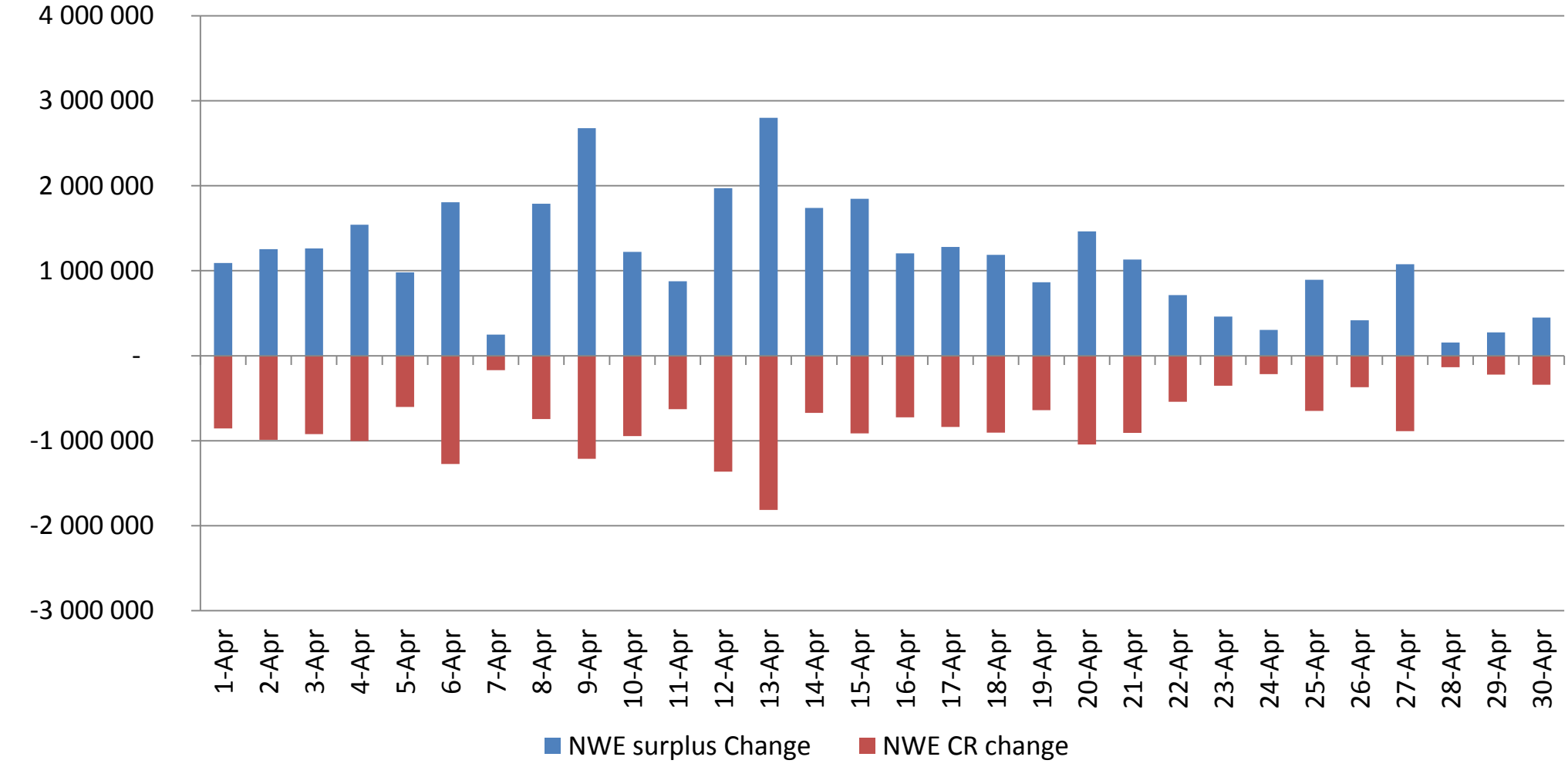
In single hours the producer/consumer gain can be positive or negative. The highlighted value presents the sum of all hours of the respective month.

April 2014

Evolution of social welfare in NWE area that could be gained with no network constraints in CWE



April 2014


Split of social welfare gain in surplus and congestion rent in the NWE area
4 000 000
3 000 000
2 000 000
1 000 000
-
-1 000 000
-2 000 000
-3 000 000
1-Apr
2-Apr
3-Apr
4-Apr
5-Apr
6-Apr
7-Apr
8-Apr
9-Apr
10-Apr
11-Apr
12-Apr
13-Apr
14-Apr
15-Apr
16-Apr
17-Apr
18-Apr
19-Apr
20-Apr
21-Apr
22-Apr
23-Apr
24-Apr
25-Apr
26-Apr
27-Apr
28-Apr
29-Apr
30-Apr
NWE surplus Change
NWE CR change

May 2014

- Additional Social welfare in the NWE area that could be gained with no network constraints in CWE:

9,1 M€

Social welfare = Producer surplus + Consumer surplus + Congestion rent

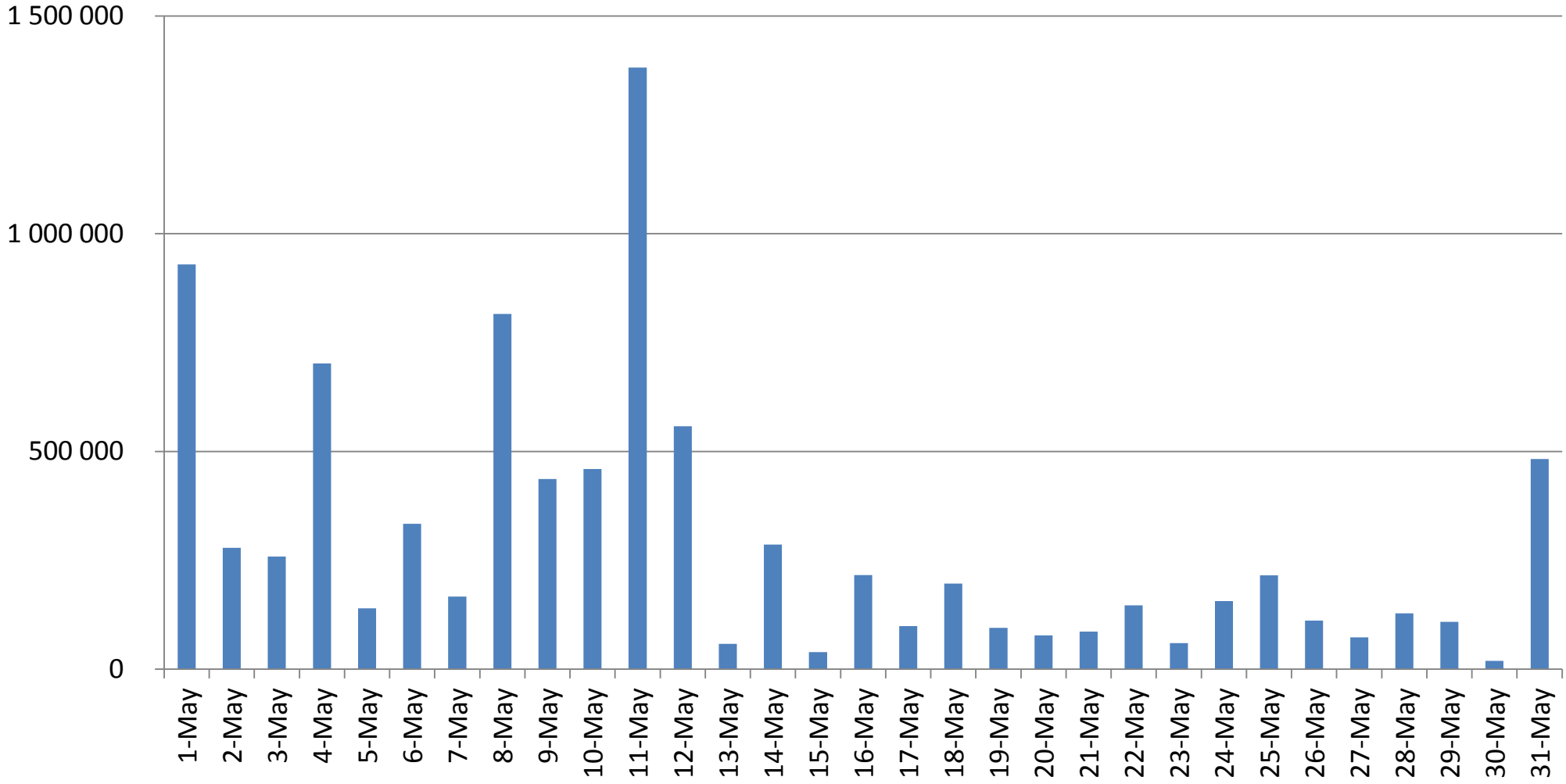
Producer surplus	43,6 M€
Consumer surplus	-7,5 M€
Congestion Rent	-26,9 M€

NB: Producer surplus, Consumer surplus and Congestion Rent are calculated as such:
Sum of daily (Value with ATC=∞) - (Historical value)
The daily values being a Sum of hourly values.

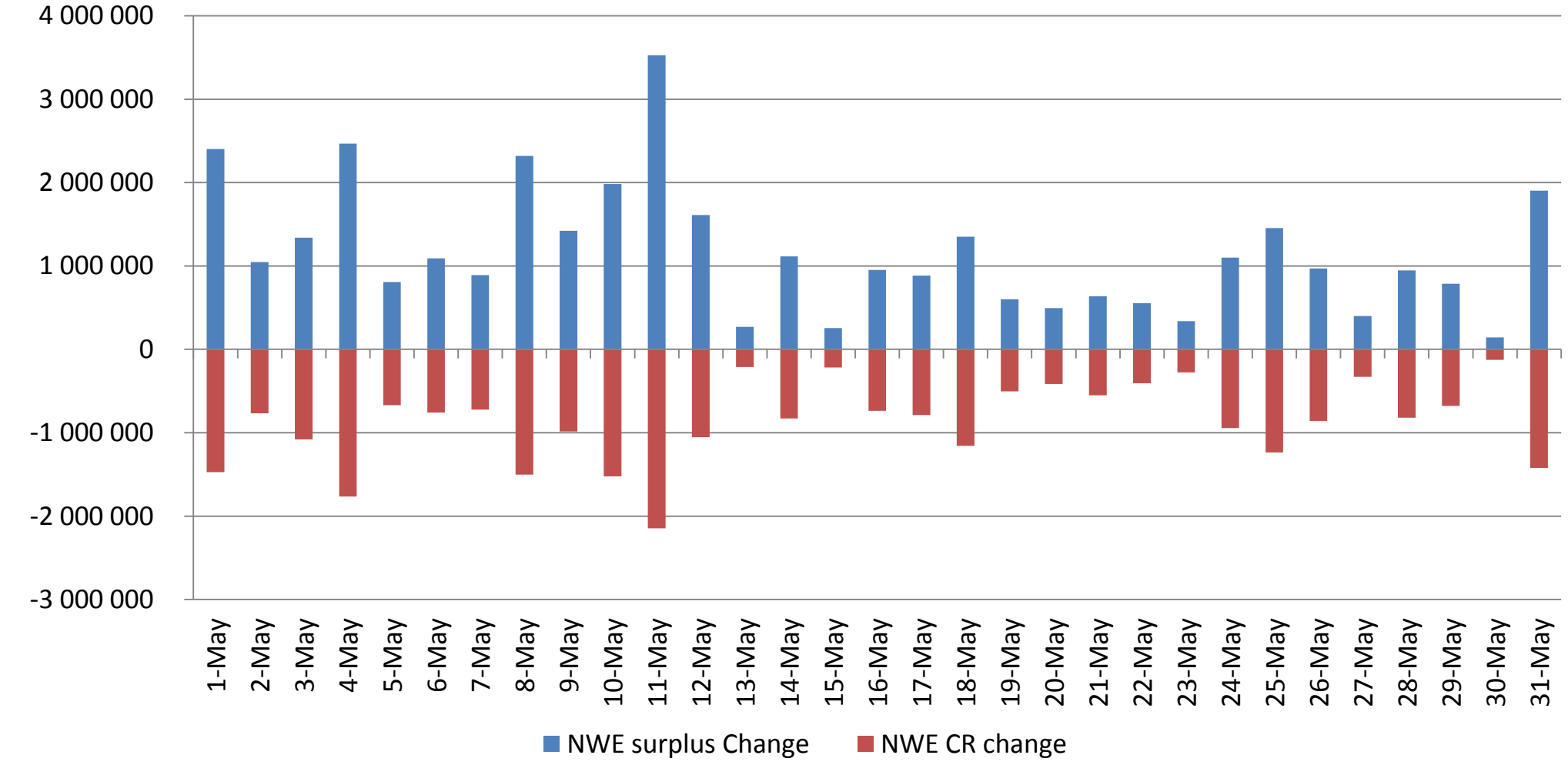
In single hours the producer/consumer gain can be positive or negative. The highlighted value presents the sum of all hours of the respective month.

May 2014

Evolution of social welfare in NWE area that could be gained with no network constraints in CWE



May 2014


Split of social welfare gain in surplus and congestion rent in the NWE area
4 000 000
3 000 000
2 000 000
1 000 000
0
-1 000 000
-2 000 000
-3 000 000
1-May
2-May
3-May
4-May
5-May
6-May
7-May
8-May
9-May
10-May
11-May
12-May
13-May
14-May
15-May
16-May
17-May
18-May
19-May
20-May
21-May
22-May
23-May
24-May
25-May
26-May
27-May
28-May
29-May
30-May
31-May
NWE surplus Change
NWE CR change

June 2014

- Additional Social welfare in the NWE area that could be gained with no network constraints in CWE:

5,3 M€

Social welfare = Producer surplus + Consumer surplus + Congestion rent

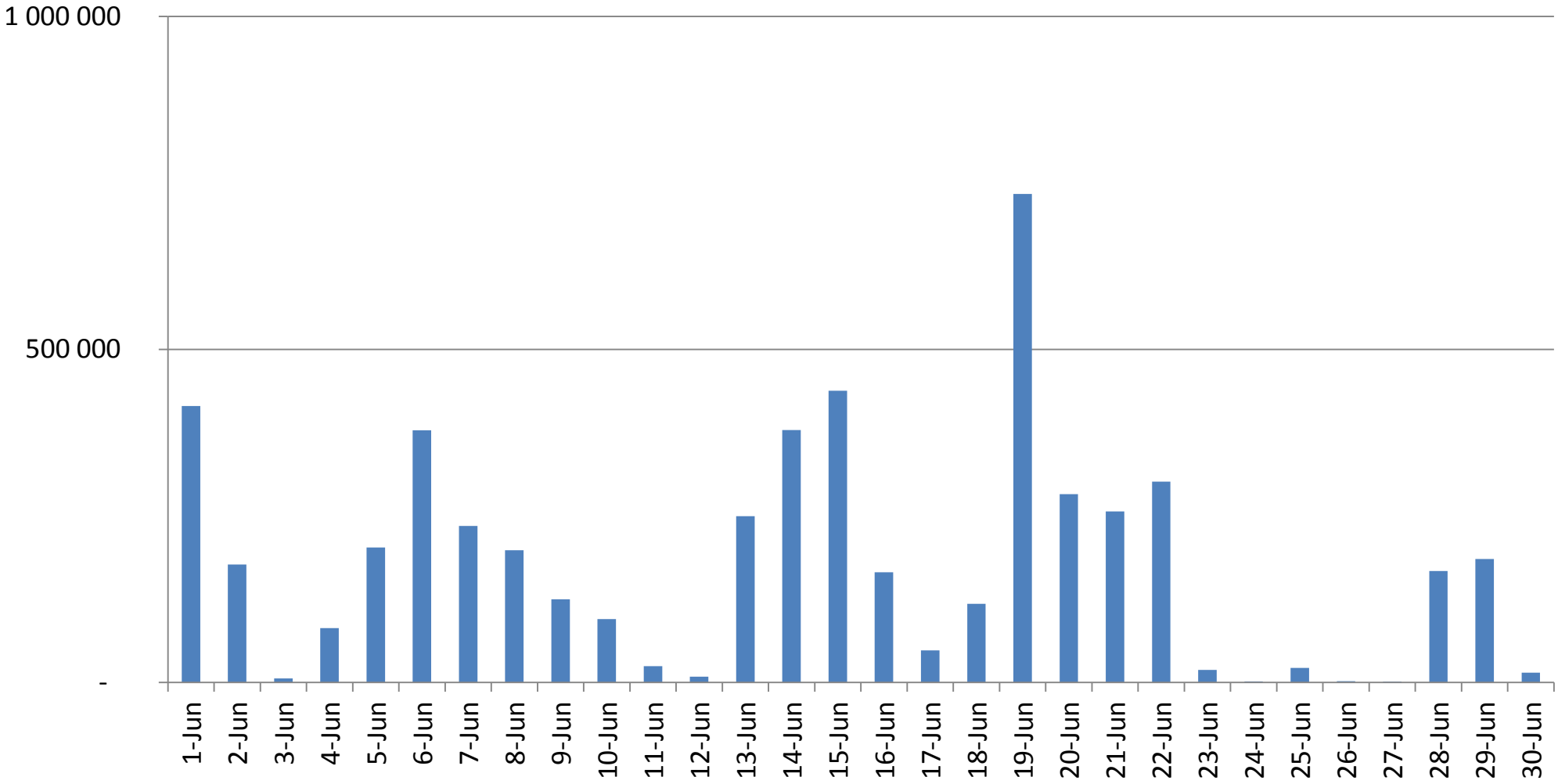
Producer surplus	20,1 M€
Consumer surplus	3,4 M€
Congestion Rent	-18,2 M€

NB: Producer surplus, Consumer surplus and Congestion Rent are calculated as such:
Sum of daily (Value with ATC=∞) - (Historical value)
The daily values being a Sum of hourly values.

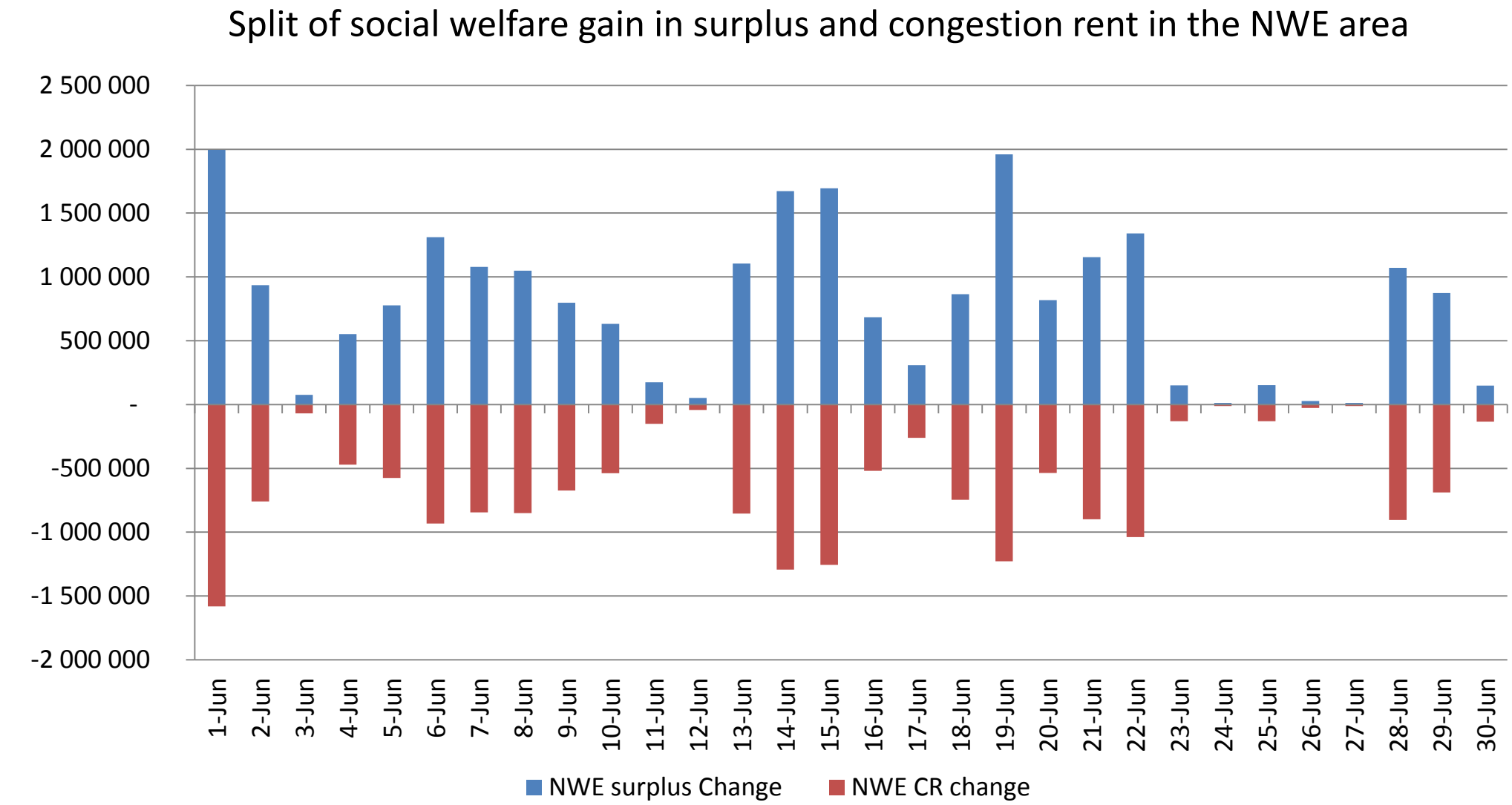
In single hours the producer/consumer gain can be positive or negative. The highlighted value presents the sum of all hours of the respective month.

June 2014

Evolution of social welfare in NWE area that could be gained with no network constraints in CWE



June 2014


Split of social welfare gain in surplus and congestion rent in the NWE area
2 500 000
2 000 000
1 500 000
1 000 000
500 000
-
-500 000
-1 000 000
-1 500 000
-2 000 000
1-Jun
2-Jun
3-Jun
4-Jun
5-Jun
6-Jun
7-Jun
8-Jun
9-Jun
10-Jun
11-Jun
12-Jun
13-Jun
14-Jun
15-Jun
16-Jun
17-Jun
18-Jun
19-Jun
20-Jun
21-Jun
22-Jun
23-Jun
24-Jun
25-Jun
26-Jun
27-Jun
28-Jun
29-Jun
30-Jun
NWE surplus Change
NWE CR change

July 2014

- Additional Social welfare in the NWE area that could be gained with no network constraints in CWE:

10,6 M€

Social welfare = Producer surplus + Consumer surplus + Congestion rent

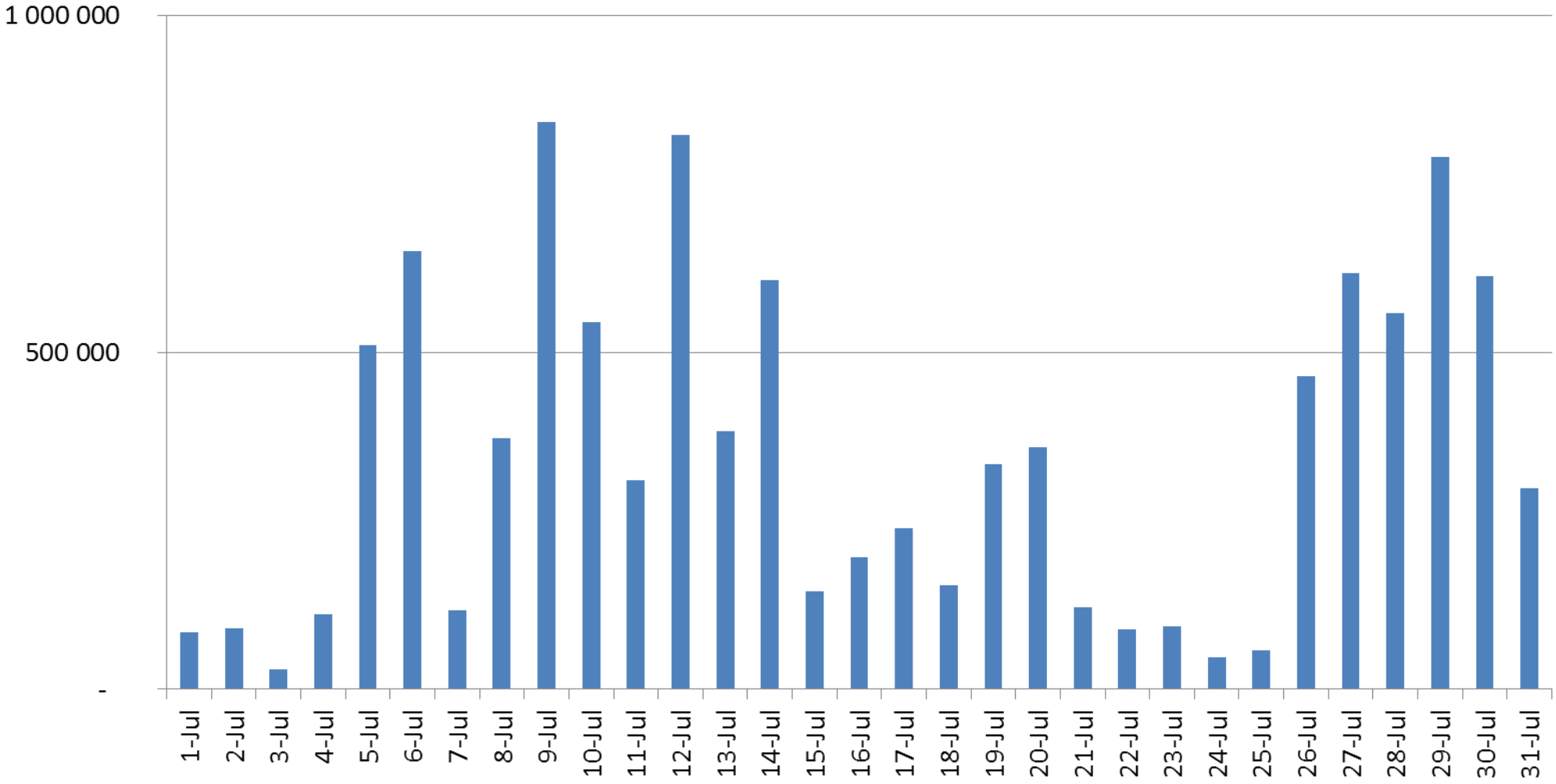
Producer surplus	9,8 M€
Consumer surplus	26,3 M€
Congestion Rent	-25,5 M€

NB: Producer surplus, Consumer surplus and Congestion Rent are calculated as such:
Sum of daily (Value with ATC=∞) - (Historical value)
The daily values being a Sum of hourly values.

In single hours the producer/consumer gain can be positive or negative. The highlighted value presents the sum of all hours of the respective month.

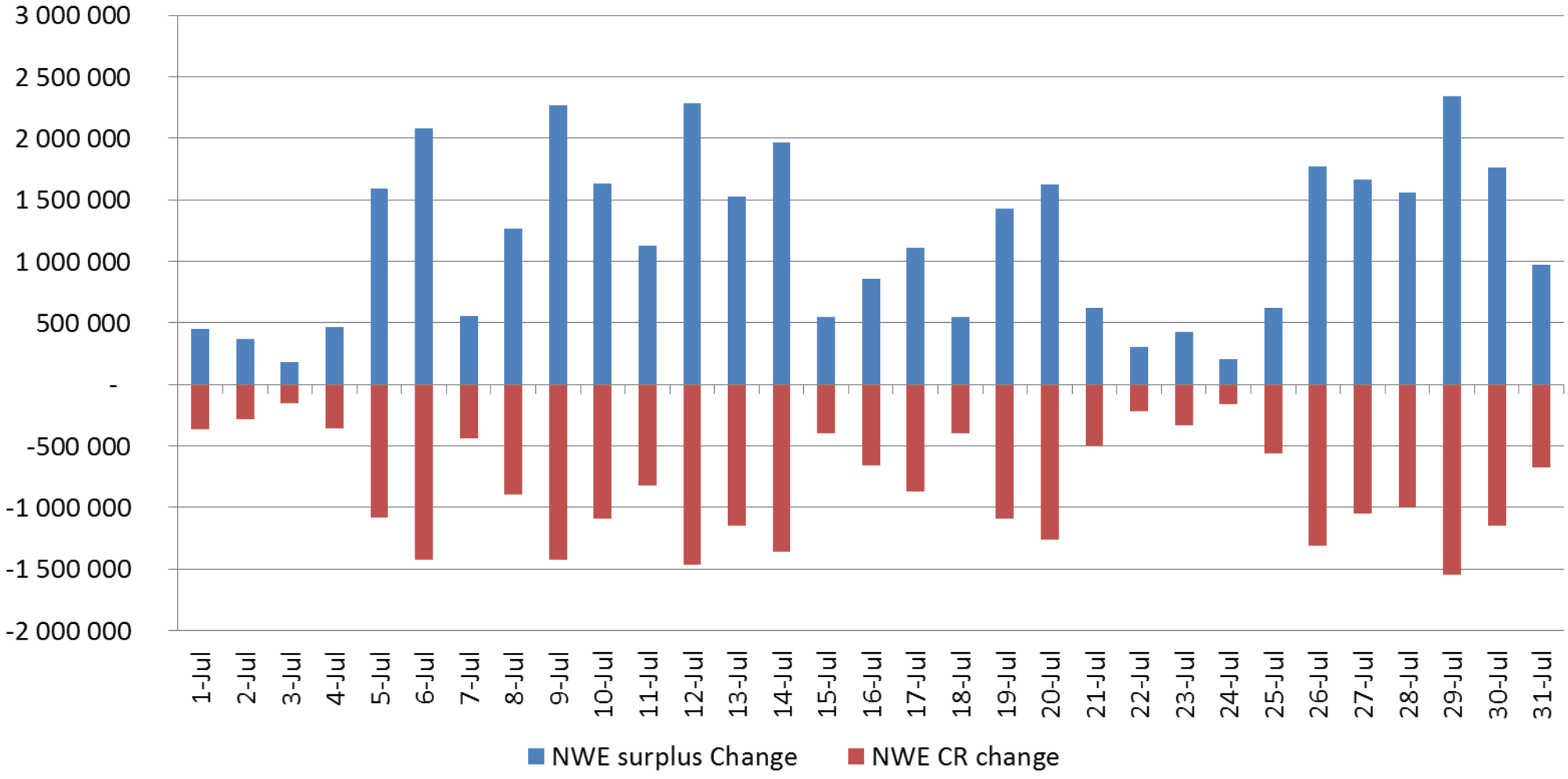
July 2014

Evolution of social welfare in NWE area that could be gained with no network constraints in CWE



July 2014

Split of social welfare gain in surplus and congestion rent in the NWE area



August 2014

- Additional Social welfare in the NWE area that could be gained with no network constraints in CWE:

21,6 M€

Social welfare = Producer surplus + Consumer surplus + Congestion rent

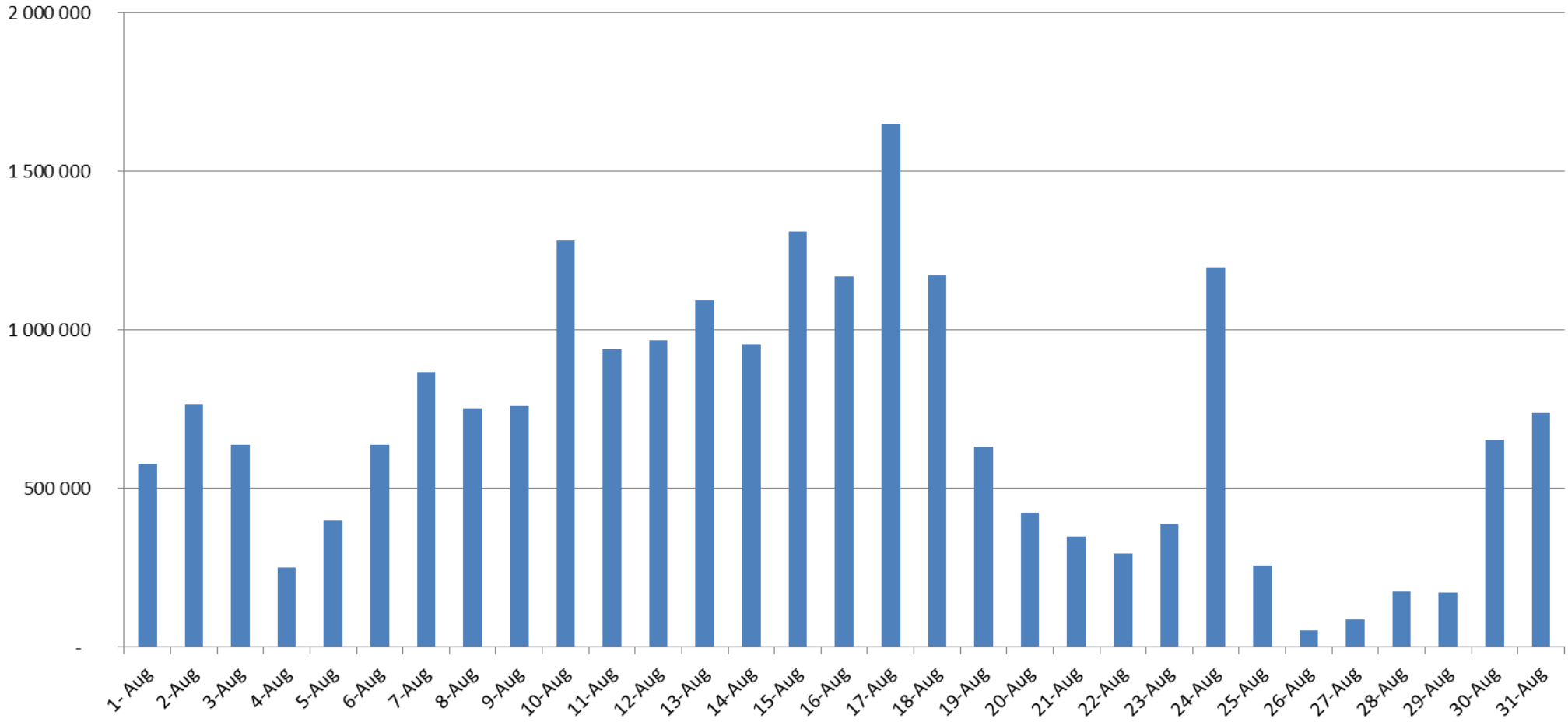
Producer surplus	55,1 M€
Consumer surplus	7,6 M€
Congestion Rent	- 41,1 M€

NB: Producer surplus, Consumer surplus and Congestion Rent are calculated as such:
Sum of daily (Value with ATC=∞) - (Historical value)
The daily values being a Sum of hourly values.

In single hours the producer/consumer gain can be positive or negative. The highlighted value presents the sum of all hours of the respective month.

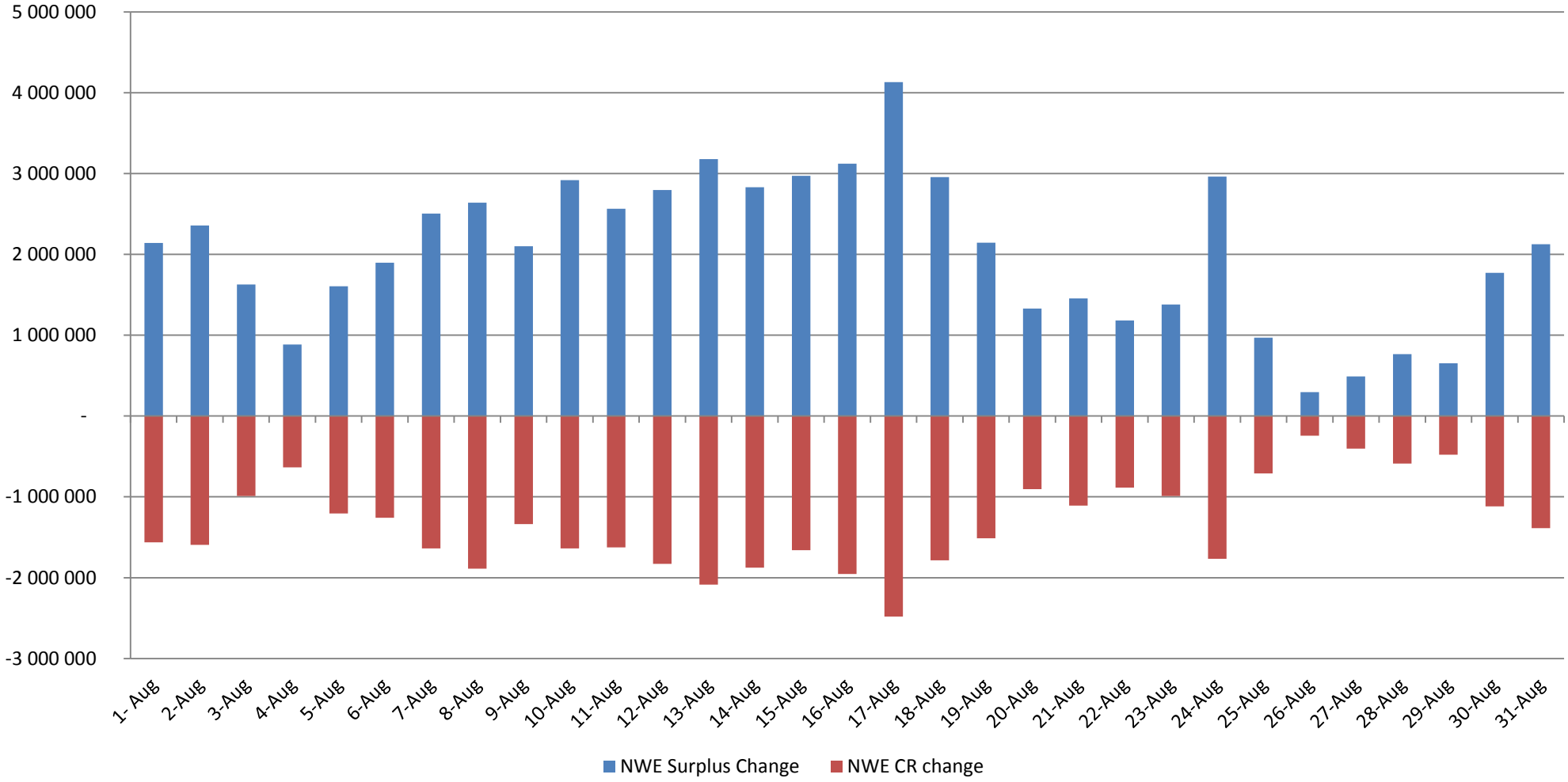
August 2014

Evolution of social welfare in NWE area that could be gained with no network constraints in CWE



August 2014

Split of social welfare gain in surplus and congestion rent in the NWE area



September 2014

- Additional Social welfare in the NWE area that could be gained with no network constraints in CWE:

14,9 M€

Social welfare = Producer surplus + Consumer surplus + Congestion rent

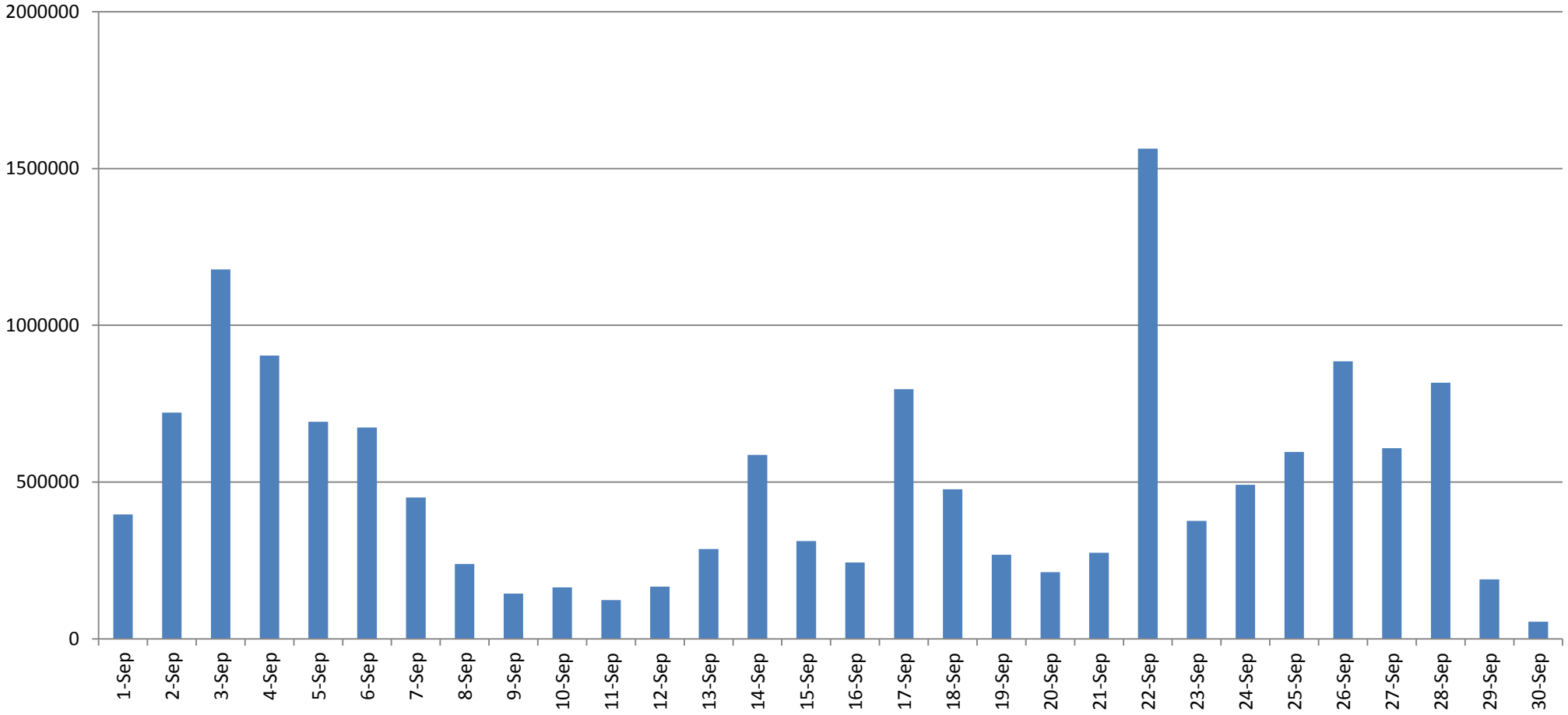
Producer surplus	60,4 M€
Consumer surplus	- 17,0 M€
Congestion Rent	- 28,5 M€

NB: Producer surplus, Consumer surplus and Congestion Rent are calculated as such:
Sum of daily (Value with ATC=∞) - (Historical value)
The daily values being a Sum of hourly values.

In single hours the producer/consumer gain can be positive or negative. The highlighted value presents the sum of all hours of the respective month.

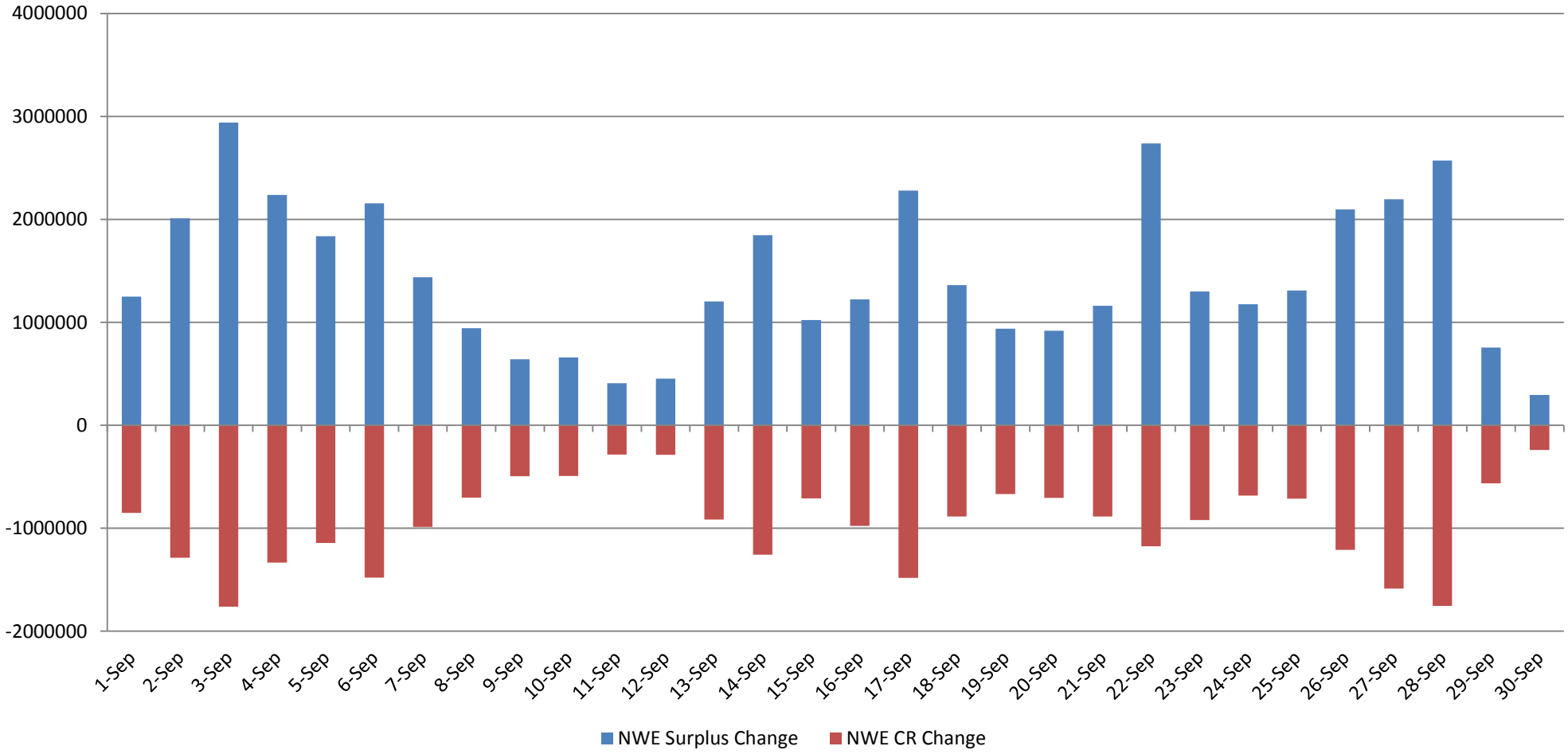
September 2014

Evolution of social welfare in NWE area that could be gained with no network constraints in CWE



September 2014

Split of social welfare gain in surplus and congestion rent in the NWE area



October 2014

- Additional Social welfare in the NWE area that could be gained with no network constraints in CWE:

16,4 M€

Social welfare = Producer surplus + Consumer surplus + Congestion rent

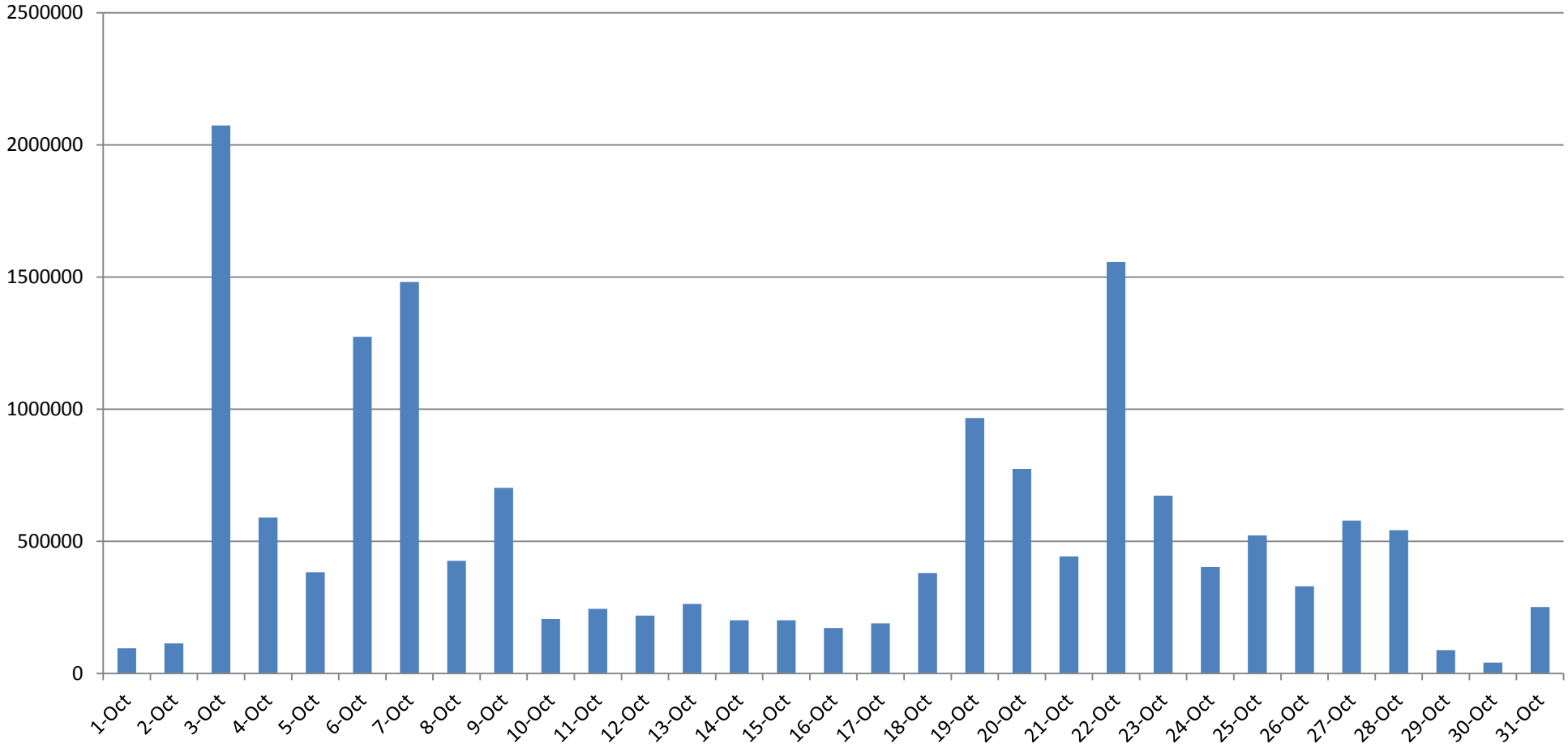
Producer surplus	68,5 M€
Consumer surplus	- 26,2 M€
Congestion Rent	- 25,9 M€

NB: Producer surplus, Consumer surplus and Congestion Rent are calculated as such:
Sum of daily (Value with ATC=∞) - (Historical value)
The daily values being a Sum of hourly values.

In single hours the producer/consumer gain can be positive or negative. The highlighted value presents the sum of all hours of the respective month.

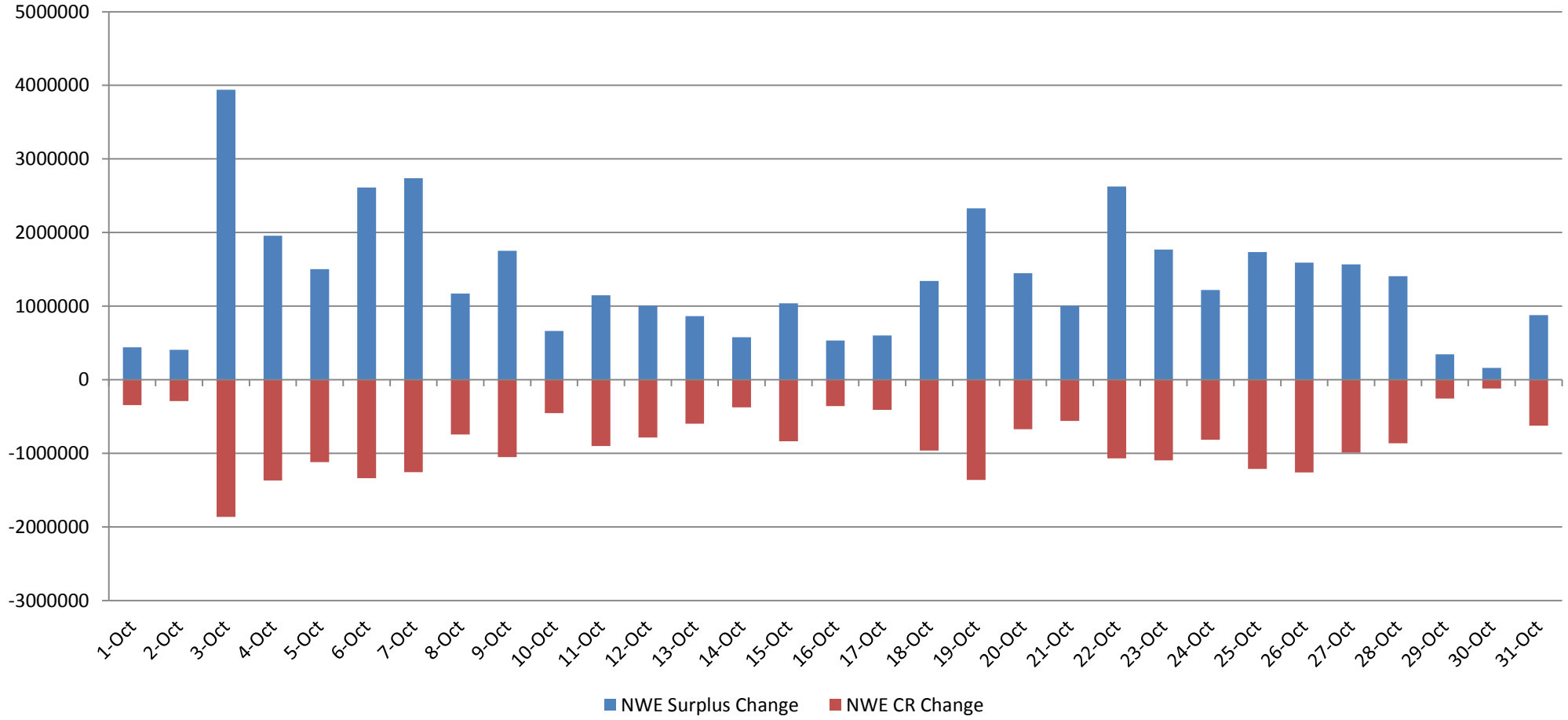
October 2014

Evolution of social welfare in NWE area that could be gained with no network constraints in CWE



October 2014

Split of social welfare gain in surplus and congestion rent in the NWE area



November 2014

- Additional Social welfare in the NWE area that could be gained with no network constraints in CWE:

11,4 M€

Social welfare = Producer surplus + Consumer surplus + Congestion rent

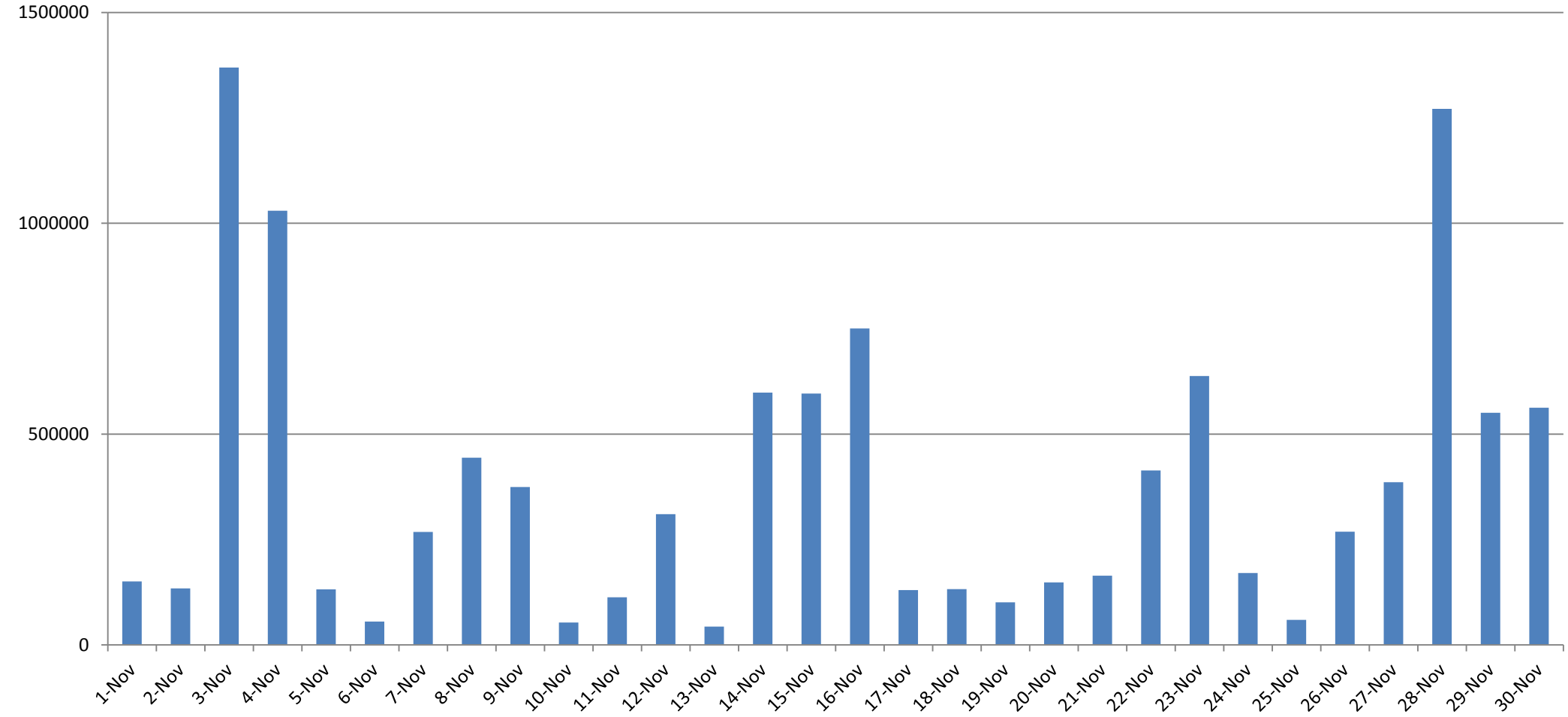
Producer surplus	29,9 M€
Consumer surplus	4,3 M€
Congestion Rent	-22,8 M€

NB: Producer surplus, Consumer surplus and Congestion Rent are calculated as such:
Sum of daily (Value with ATC=∞) - (Historical value)
The daily values being a Sum of hourly values.

In single hours the producer/consumer gain can be positive or negative. The highlighted value presents the sum of all hours of the respective month.

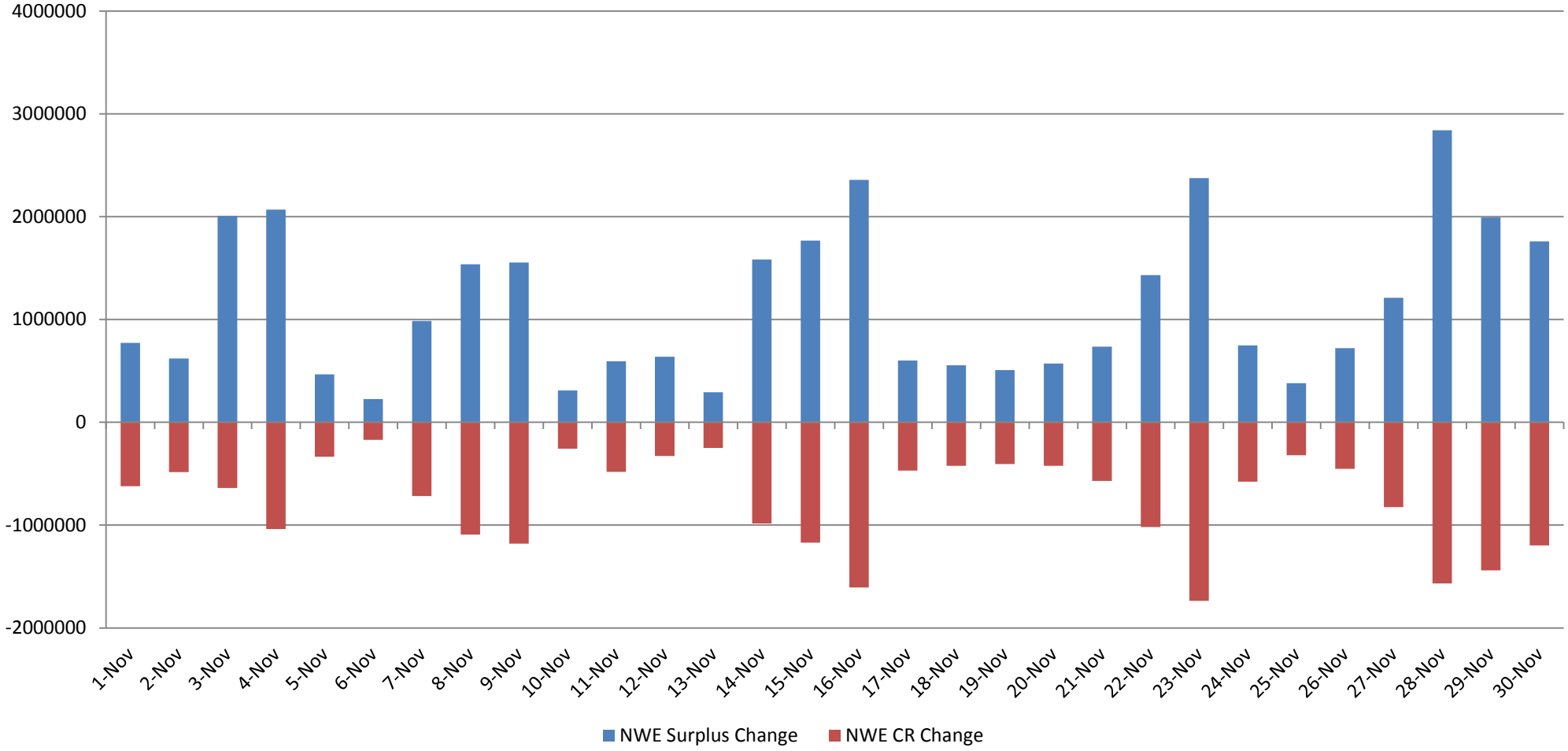
November 2014

Evolution of social welfare in NWE area that could be gained with no network constraints in CWE



November 2014

Split of social welfare gain in surplus and congestion rent in the NWE area



December 2014

- Additional Social welfare in the NWE area that could be gained with no network constraints in CWE:

29,1 M€

Social welfare = Producer surplus + Consumer surplus + Congestion rent

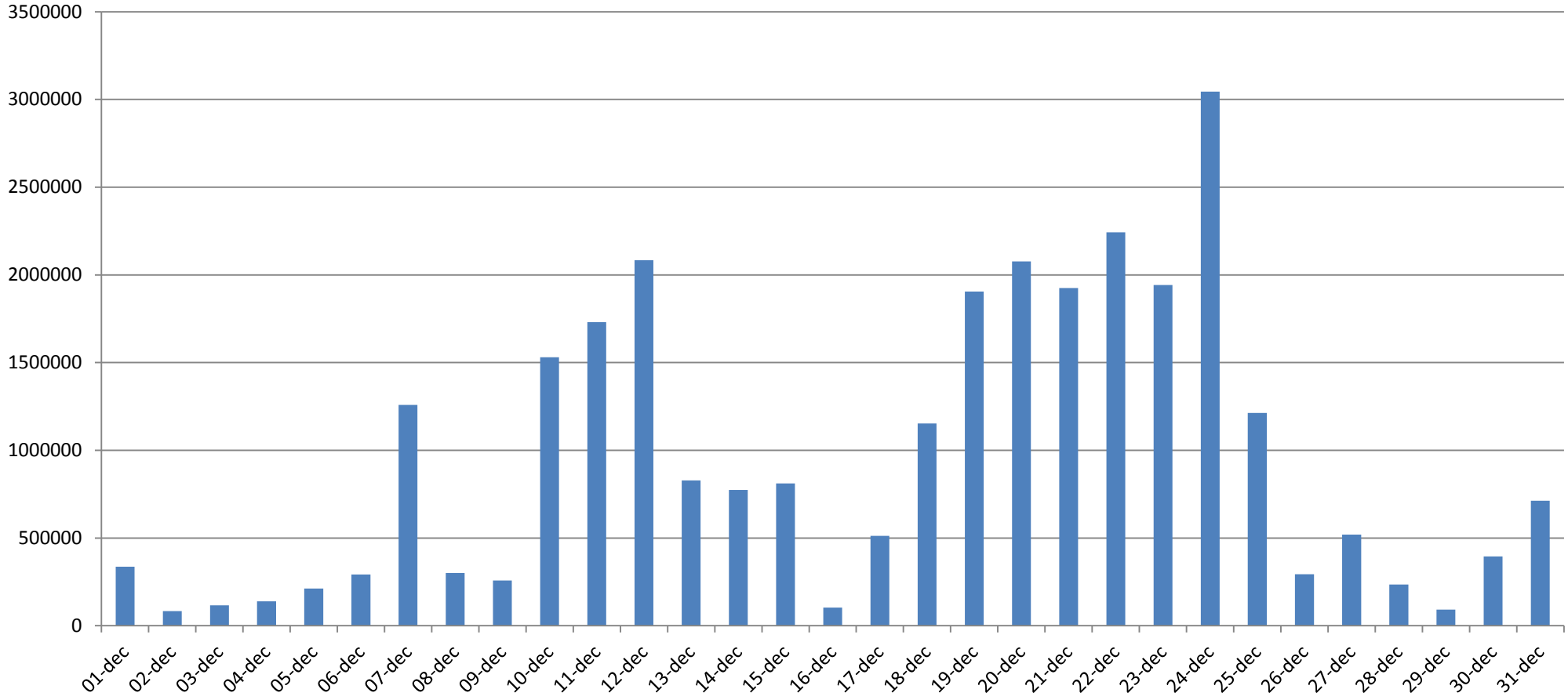
Producer surplus	121,8 M€
Consumer surplus	- 62,5 M€
Congestion Rent	- 30,2 M€

NB: Producer surplus, Consumer surplus and Congestion Rent are calculated as such:
Sum of daily (Value with ATC=∞) - (Historical value)
The daily values being a Sum of hourly values.

In single hours the producer/consumer gain can be positive or negative. The highlighted value presents the sum of all hours of the respective month.

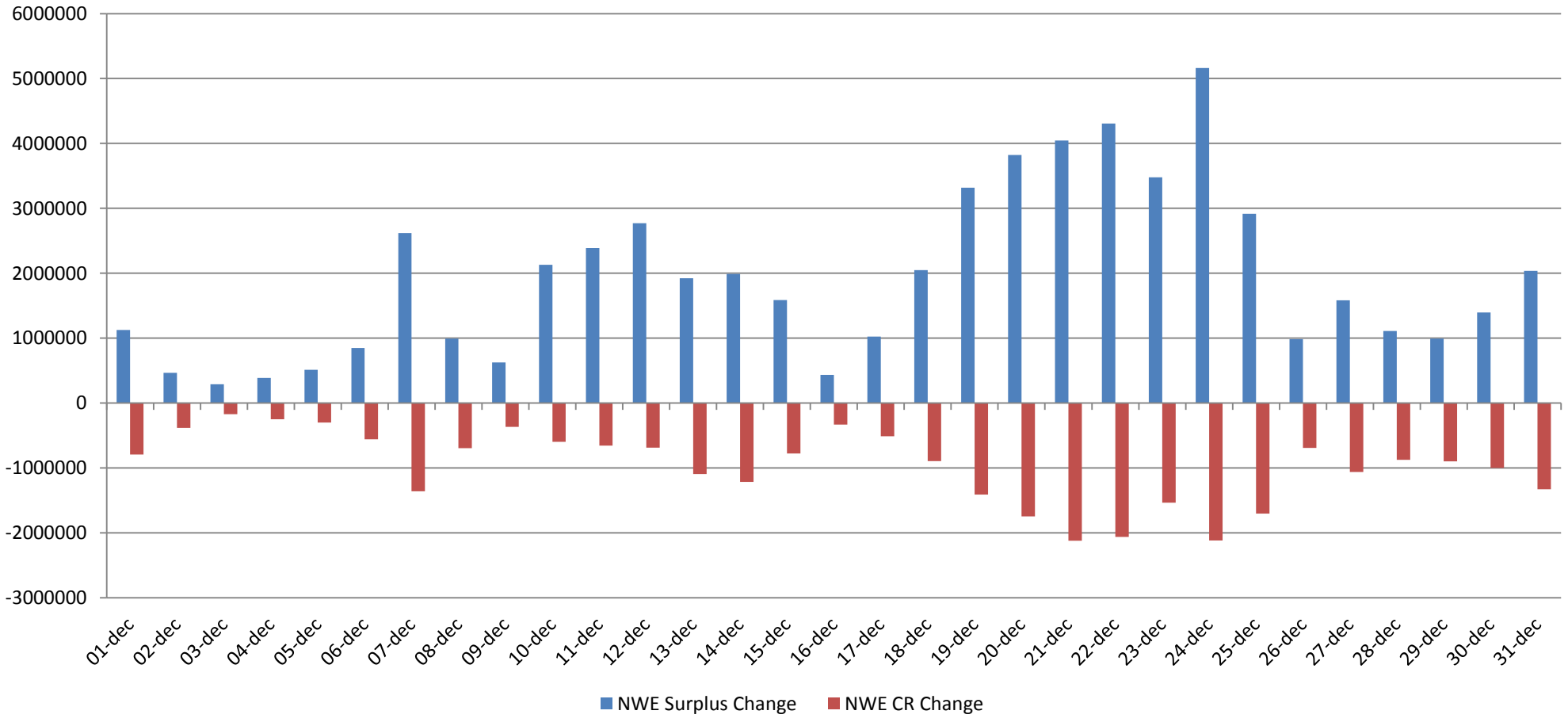
December 2014

Evolution of social welfare in NWE area that could be gained with no network constraints in CWE



December 2014

Split of social welfare gain in surplus and congestion rent in the NWE area



- Definitions / explanations

Additional Social welfare that could be gained with no network constraints (*Definition/explanation*)

- The figure shows the additional social welfare that could be gained in the NWE area with no network constraints inside CWE (borders D-NL, NL-B, B-F, D-F).

- This key figure is calculated by hourly simulating/ coupling the CWE-region with ATC= ∞ at the borders D-NL, NL-B, B-F, D-F and comparing to real MC-results:
  - Producer surplus= Producer surplus (ATC= ∞)- Producer surplus(real ATC)
  - Consumer surplus=Consumer surplus (ATC= ∞)- Consumer surplus(real ATC)
  - Congestion rent= Congestion rent (ATC= ∞)- congestion rent(real ATC)

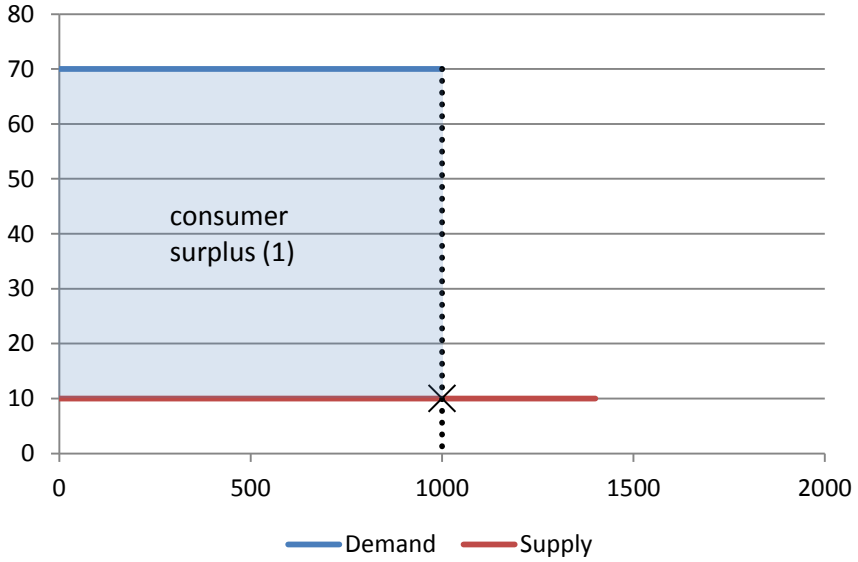
Additional Social welfare that could be gained with no network constraints (*Definition/explanation*)

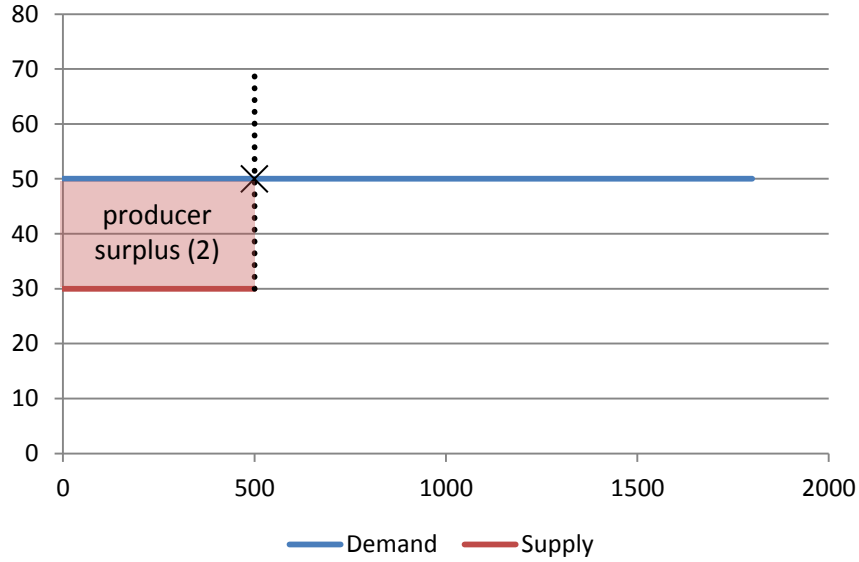
- The purpose of the welfare reporting is the demonstration of the benefits of CWE ATC Market Coupling and future CWE FB MC.

- The monthly publishing of this figure was commonly agreed between the CWE Regulators and the CWE Project. It is one part of the welfare reporting.

- Examples: “*In single hours the producer/consumer gain can be positive or negative*”

Decrease in consumer surplus example 1/2
Two isolated markets (zero capacity)





Area 1

MCV: 1000 MW, MCP: € 10

Consumer surplus: € 60K
Producer surplus: € 0

Area 2

MCV: 500 MW, MCP: € 50

Consumer surplus: € 0
Producer surplus: € 10K

Totals

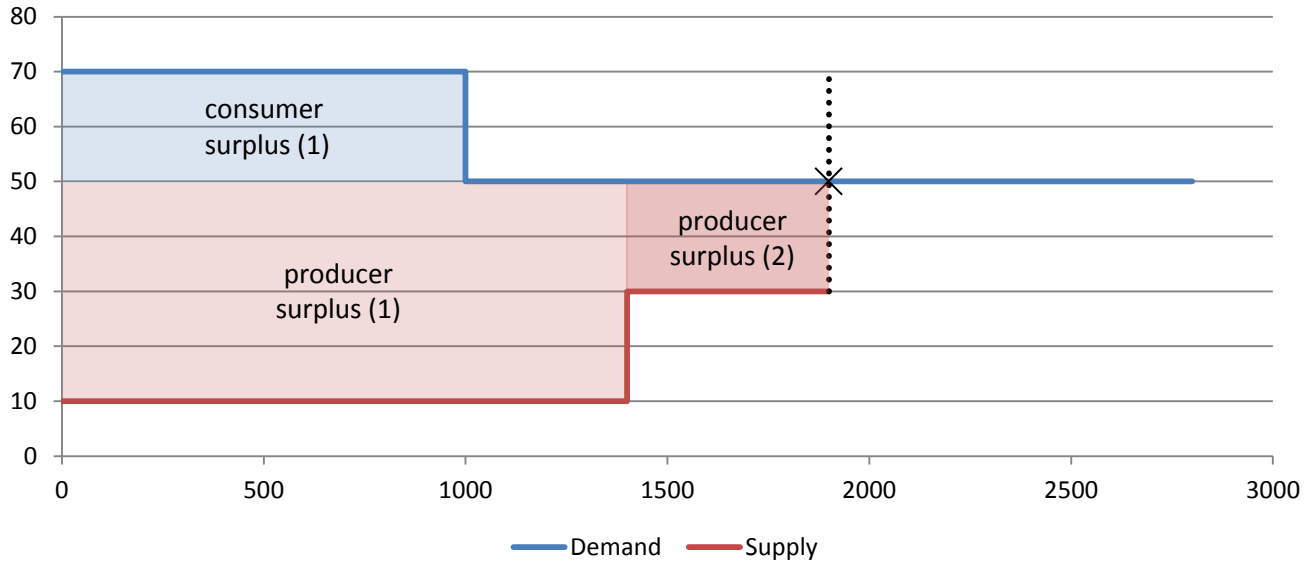
Consumer surplus: € 60K

Producer surplus: € 10K

Congestion revenue: € 0

Social welfare: € 70K

Decrease in consumer surplus example 2/2
Two coupled markets (infinite capacity)



Area 1

MCV: 1400 MW, MCP: € 50

Consumer surplus: € 20K
Producer surplus: € 56K

Area 2

MCV: 500 MW, MCP: € 50

Consumer surplus: € 0
Producer surplus: € 10K

Totals

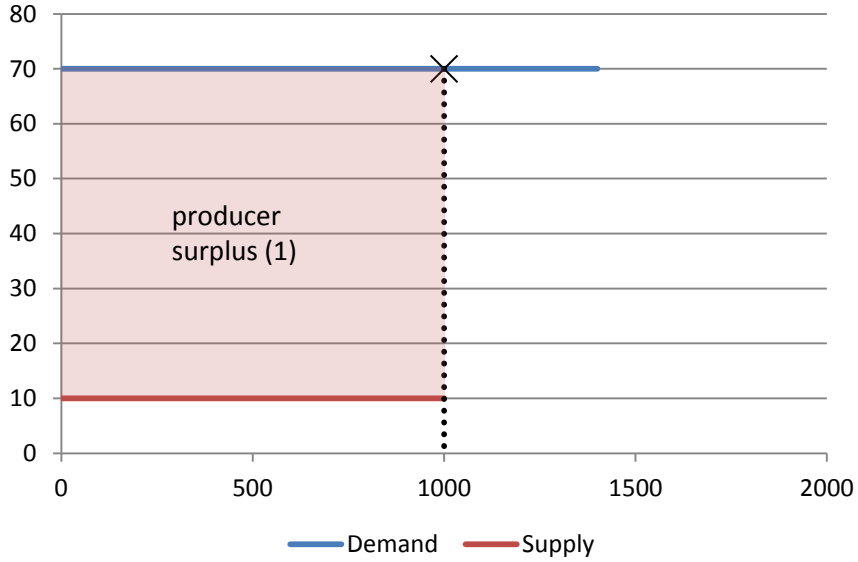
Consumer surplus: € 20K (-40K)

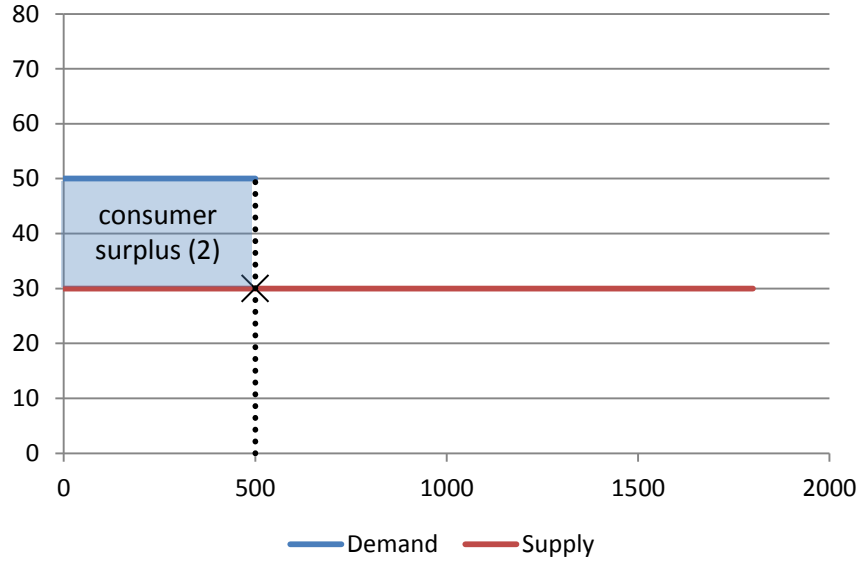
Producer surplus: € 66K (+56K)

Congestion revenue: € 0

Social welfare: € 86K (+16K)

Decrease in producer surplus example 1/2
Two isolated markets (zero capacity)





Area 1

MCV: 1000 MW, MCP: € 70

Consumer surplus: € 0
Producer surplus: € 60K

Area 2

MCV: 500 MW, MCP: € 30

Consumer surplus: € 10K
Producer surplus: € 0

Totals

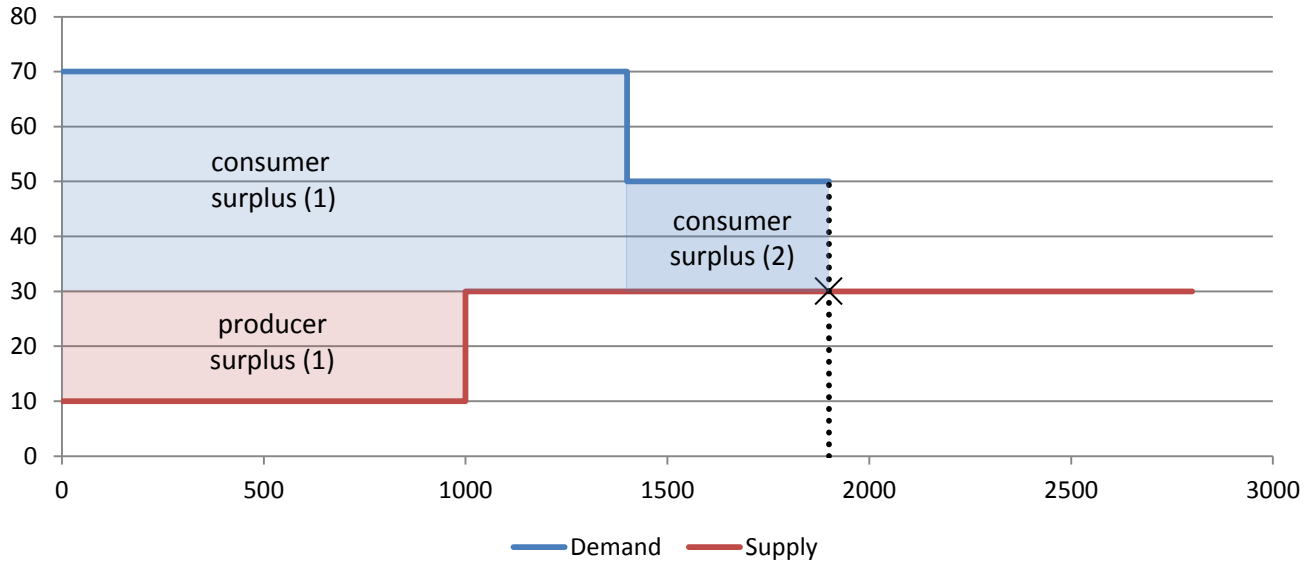
Consumer surplus: € 10K

Producer surplus: € 60K

Congestion revenue: € 0

Social welfare: € 70K

Decrease in producer surplus example 2/2
Two coupled markets (infinite capacity)



Area 1
MCV: 1400 MW, MCP: € 30

Consumer surplus: € 56K
Producer surplus: € 20K

Area 2
MCV: 500 MW, MCP: € 30

Consumer surplus: € 10K
Producer surplus: € 0

Totals

Consumer surplus: € 66K (+56K)
Producer surplus: € 20K (-40K)
Congestion revenue: € 0
Social welfare: € 86K (+16K)