Social Welfare Report
01-12 / 2012

January 2012

▶ Additional Social welfare that could be gained with no network constraints:

3,7 M€

Social welfare = Producer surplus + Consumer surplus + Congestion rent

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Producer surplus	36,3 M€
Consumer surplus	-21,8 M€
Congestion Rent	-10,8 M€

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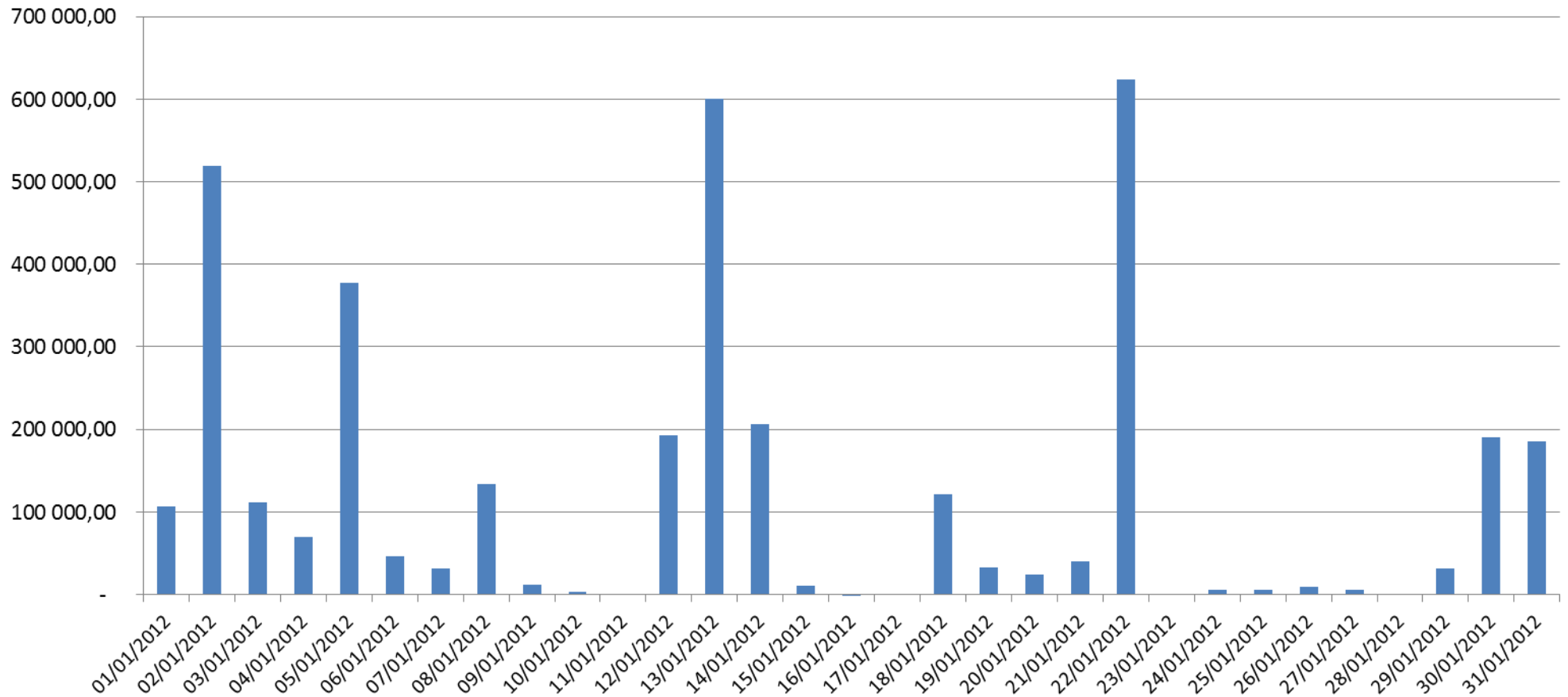*Sum of daily (Value with ATC=∞) - (Historical value)*
The daily values being a Sum of hourly values.

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

January 2012

Evolution of social welfare that could be gained with no network constraints

February 2012

▸ Additional Social welfare that could be gained with no network constraints: **31,7 M€**

Social welfare =   Producer surplus + Consumer surplus + Congestion rent

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Producer surplus	57,4 M€
Consumer surplus	45,3 M€
Congestion Rent	-71,0 M€

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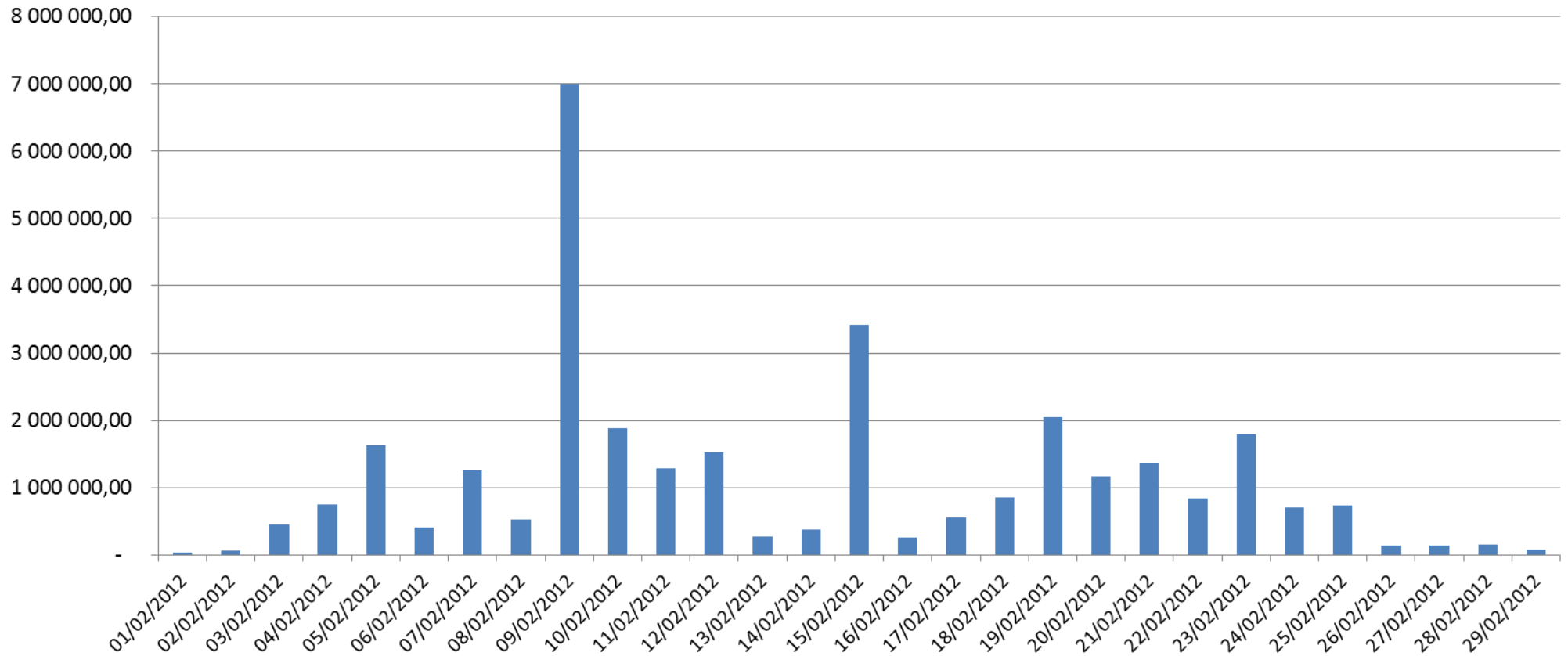_Sum of daily (Value with ATC=∞) - (Historical value)_
The daily values being a Sum of hourly values.

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

February 2012

Evolution of social welfare that could be gained with no network constraints

March 2012

▶ Additional Social welfare that could be gained with no network constraints:

4,5 M€

Social welfare = Producer surplus + Consumer surplus + Congestion rent

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Producer surplus	34,4 M€
Consumer surplus	-15,3 M€
Congestion Rent	-14,6 M€

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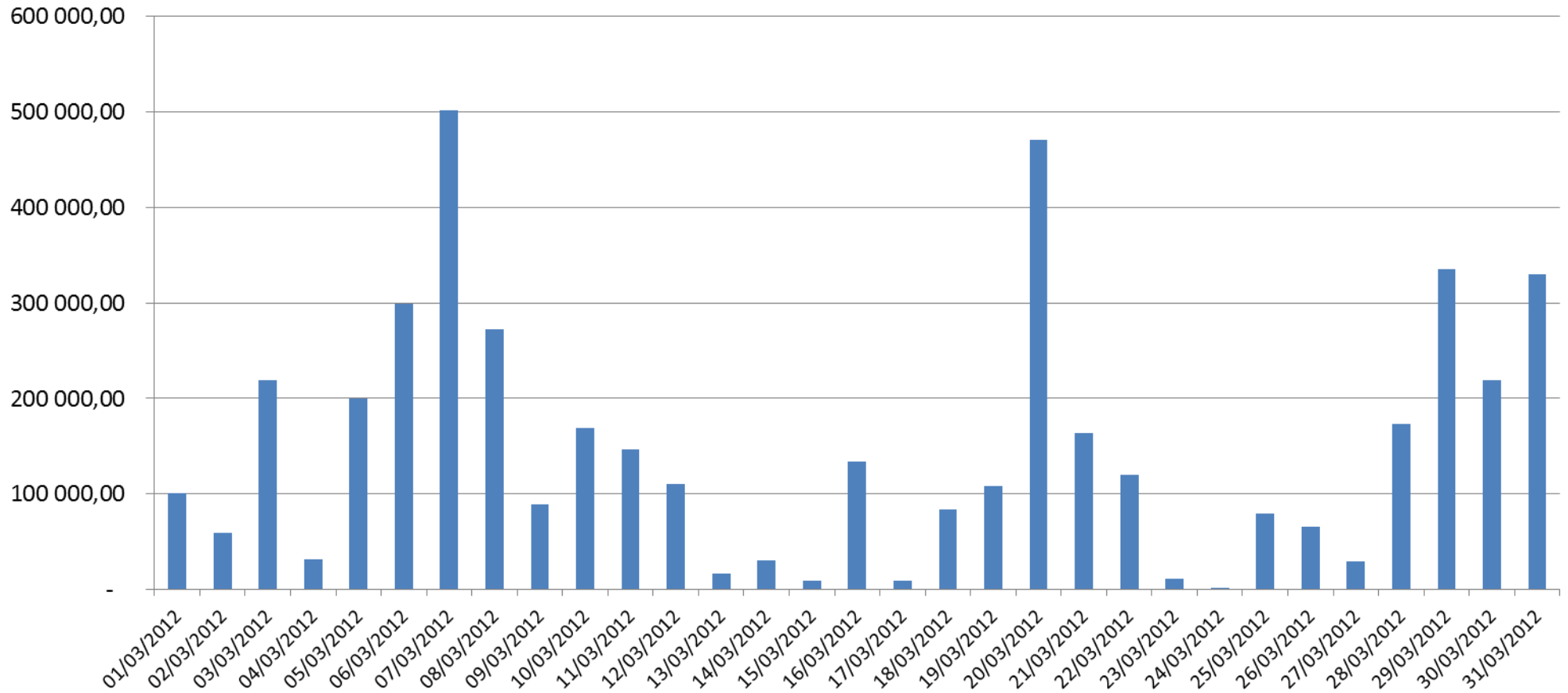_Sum of daily (Value with ATC=∞) - (Historical value)_
The daily values being a Sum of hourly values.

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

March 2012

Evolution of social welfare that could be gained with no network constraints

April 2012

▶ Additional Social welfare that could be gained with no network constraints:

> **2,5 M€**

Social welfare =   Producer surplus + Consumer surplus + Congestion rent

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Producer surplus	17,2 M€
Consumer surplus	-4,9 M€
Congestion Rent	-9,8 M€

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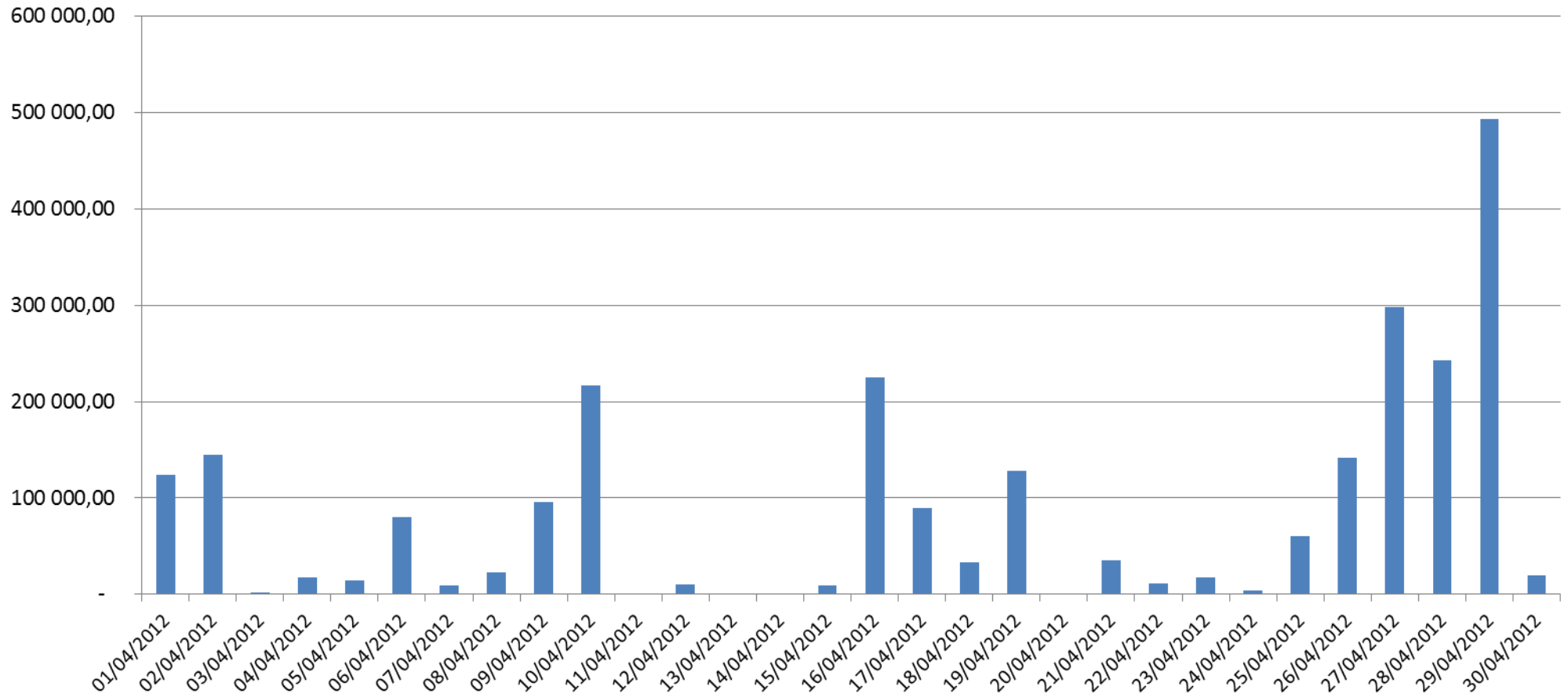_Sum of daily (Value with ATC=∞) - (Historical value)_
The daily values being a Sum of hourly values.

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

April 2012

Evolution of social welfare that could be gained with no network constraints

May 2012

▶ Additional Social welfare that could be gained with no network constraints:

5,2 M€

Social welfare =   Producer surplus + Consumer surplus + Congestion rent

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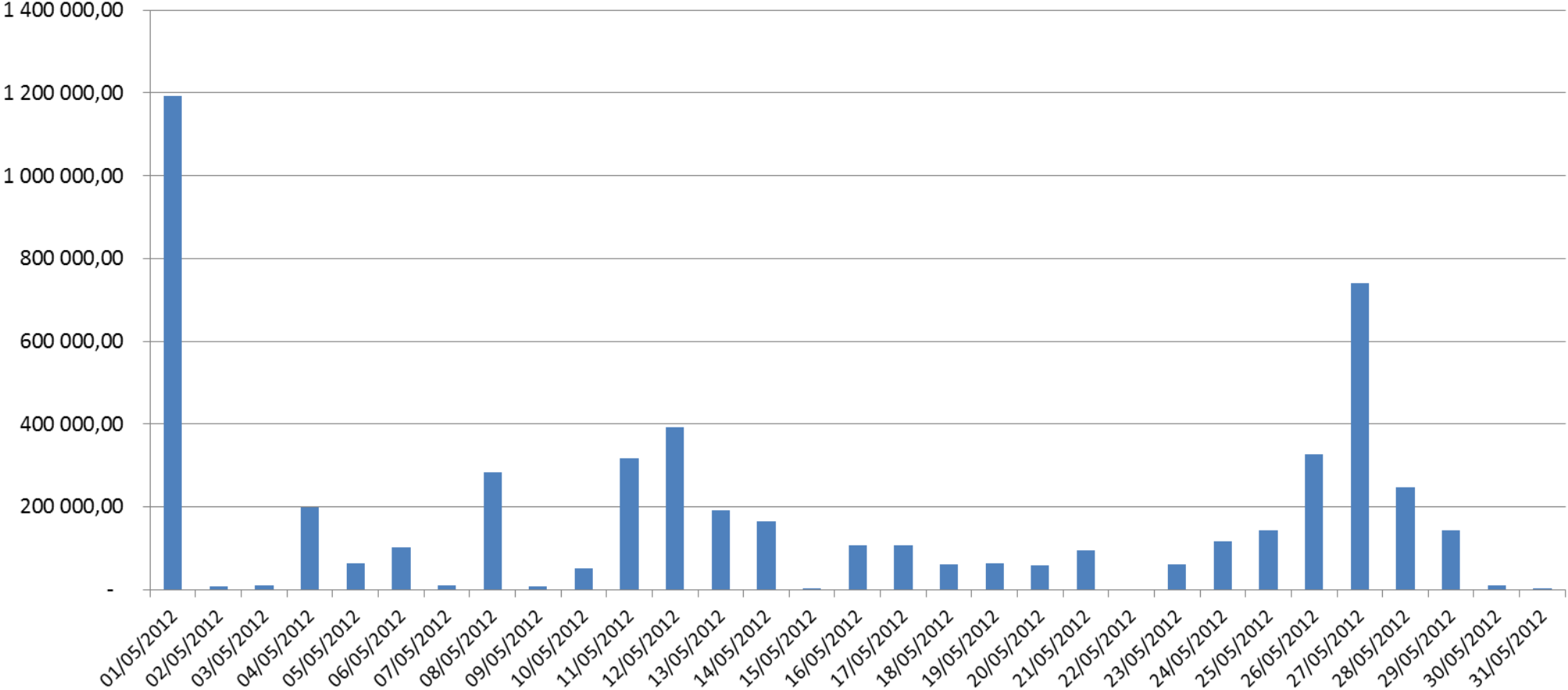|	
Producer surplus	20,3 M€
Consumer surplus	3,8 M€
Congestion Rent	-18,9 M€

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 2012

Evolution of social welfare that could be gained with no network constraints

June 2012

▶ Additional Social welfare that could be gained with no network constraints:

3,8 M€

Social welfare =   Producer surplus + Consumer surplus + Congestion rent

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Producer surplus	21,2 M€
Consumer surplus	-2,0 M€
Congestion Rent	-15,4 M€

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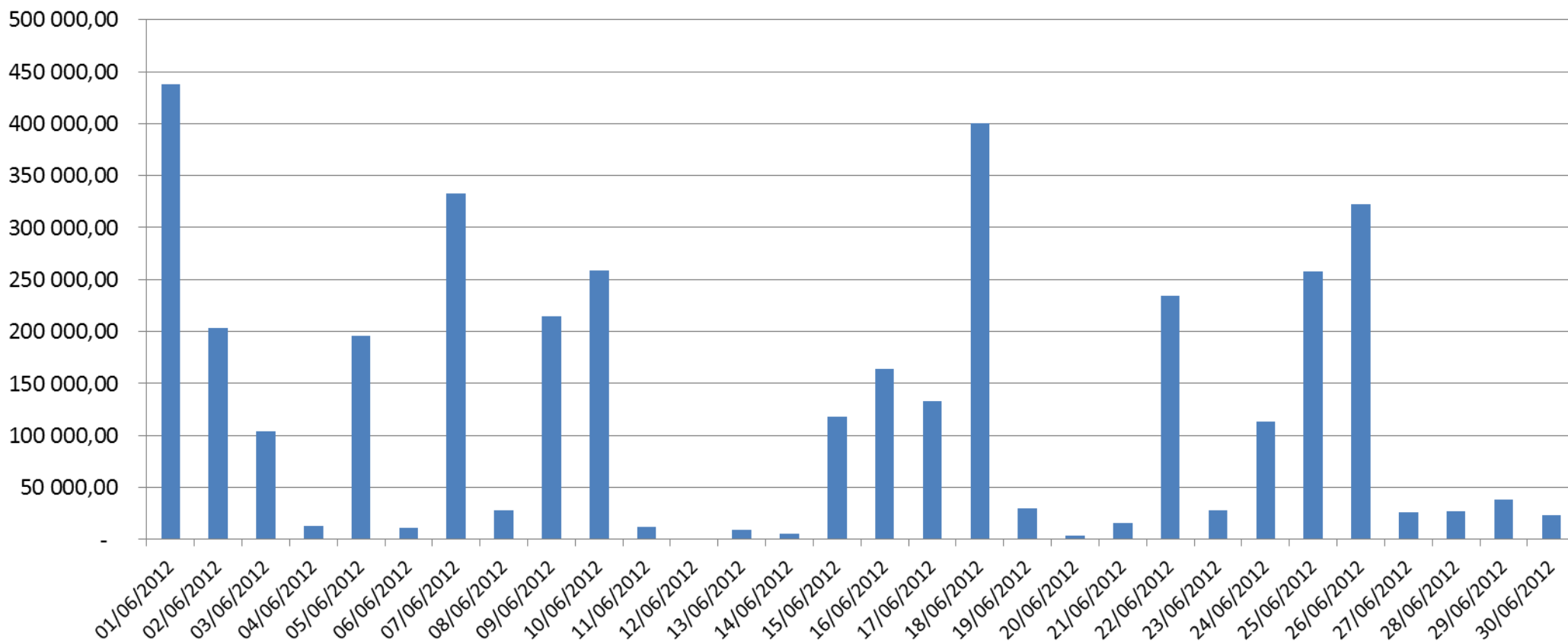_Sum of daily (Value with ATC=∞) - (Historical value)_
The daily values being a Sum of hourly values.

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 2012

Evolution of social welfare that could be gained with no network constraints

July 2012

▶ Additional Social welfare that could be gained with no network constraints: **1,9 M€**

Social welfare = Producer surplus + Consumer surplus + Congestion rent

Producer surplus	11,5 M€
Consumer surplus	-0,1 M€
Congestion Rent	-9,5 M€

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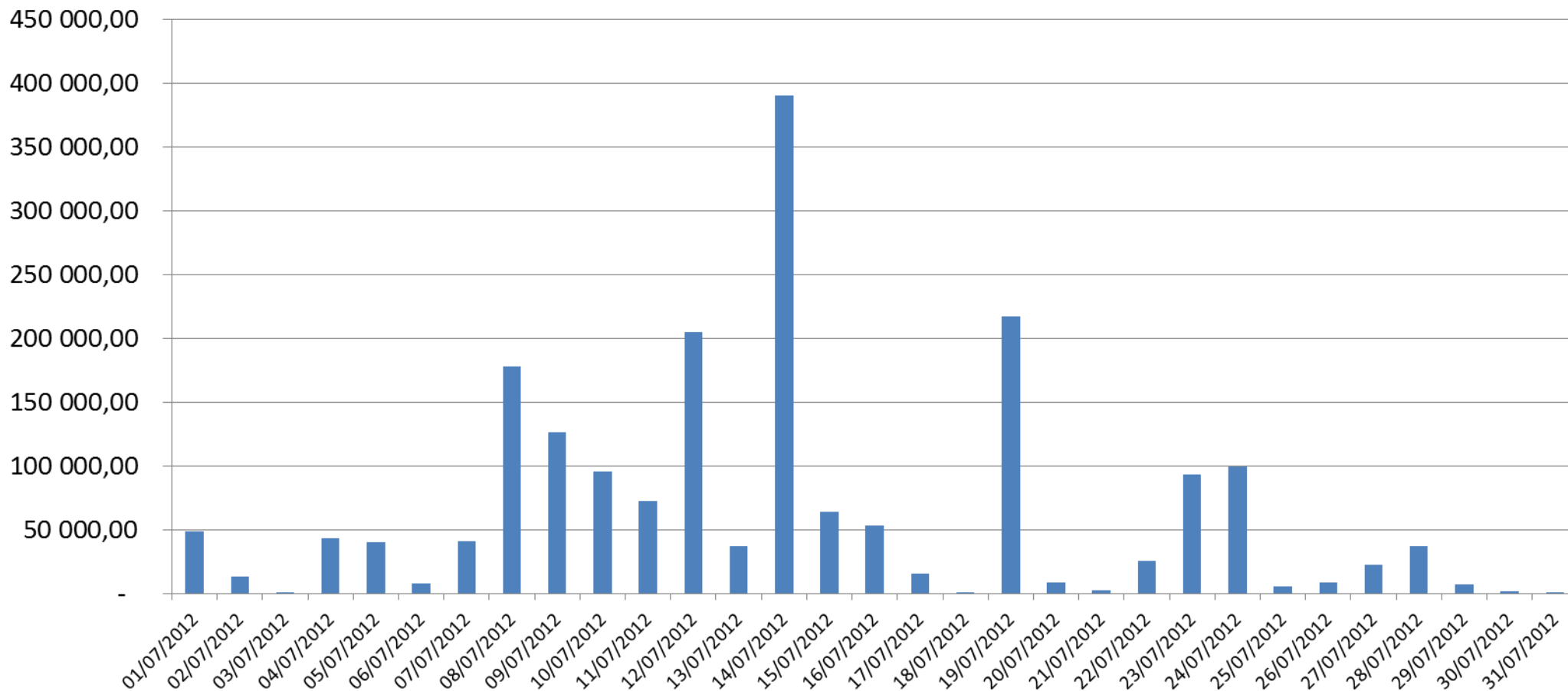*Sum of daily (Value with ATC=∞) - (Historical value)*
The daily values being a Sum of hourly values.

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 2012

Evolution of social welfare that could be gained with no network constraints

August 2012

▶ Additional Social welfare that could be gained with no network constraints:

1,9 M€

Social welfare = Producer surplus + Consumer surplus + Congestion rent

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Producer surplus	10,3 M€
Consumer surplus	-1,1 M€
Congestion Rent	-7,3 M€

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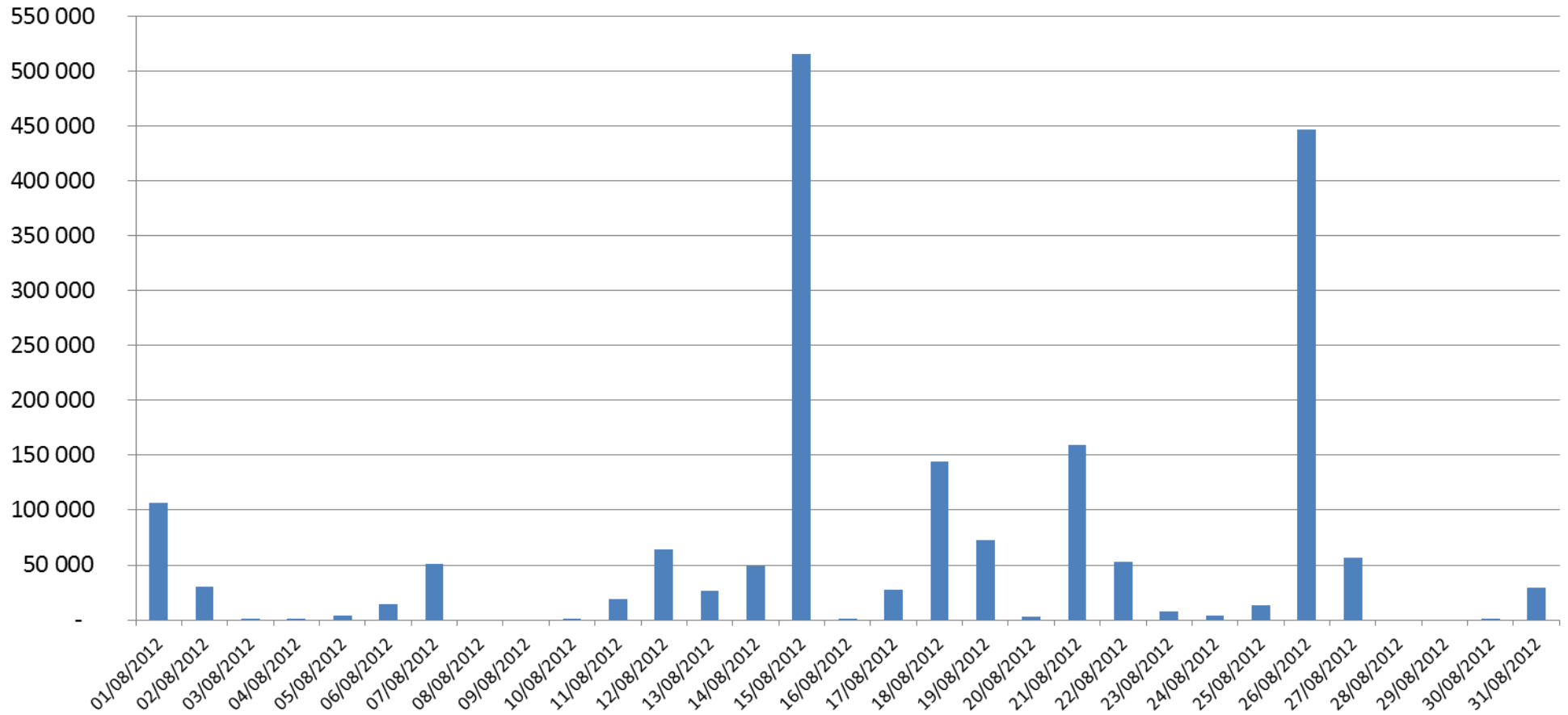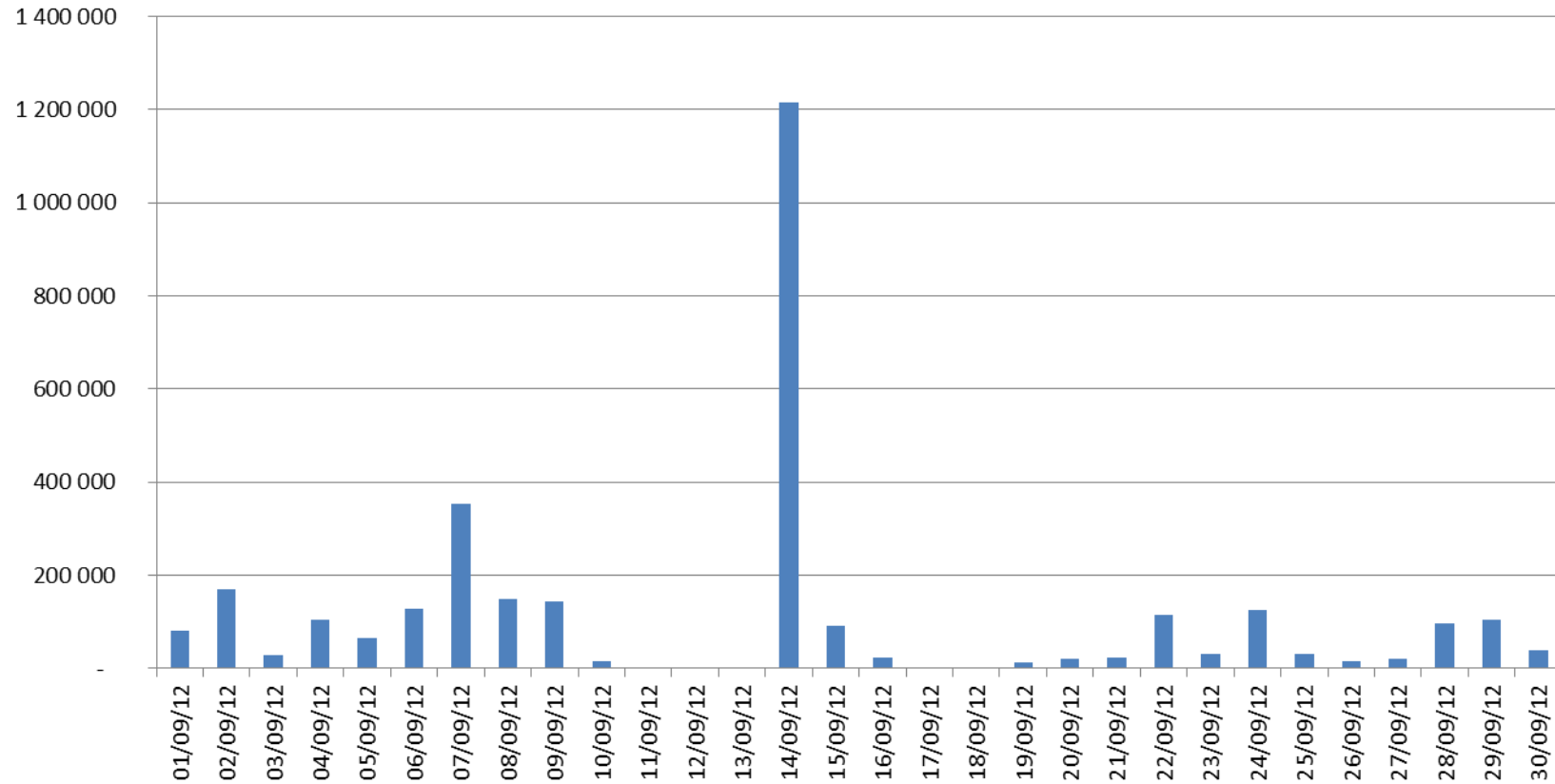*Sum of daily (Value with ATC=∞) - (Historical value)*
The daily values being a Sum of hourly values.

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.

August 2012

Evolution of social welfare that could be gained with no network constraints

September 2012

▶ Additional Social welfare that could be gained with no network constraints:

3,2 M€

Social welfare =   Producer surplus + Consumer surplus + Congestion rent

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Producer surplus	19,7 M€
Consumer surplus	-5,2 M€
Congestion Rent	-11,3 M€

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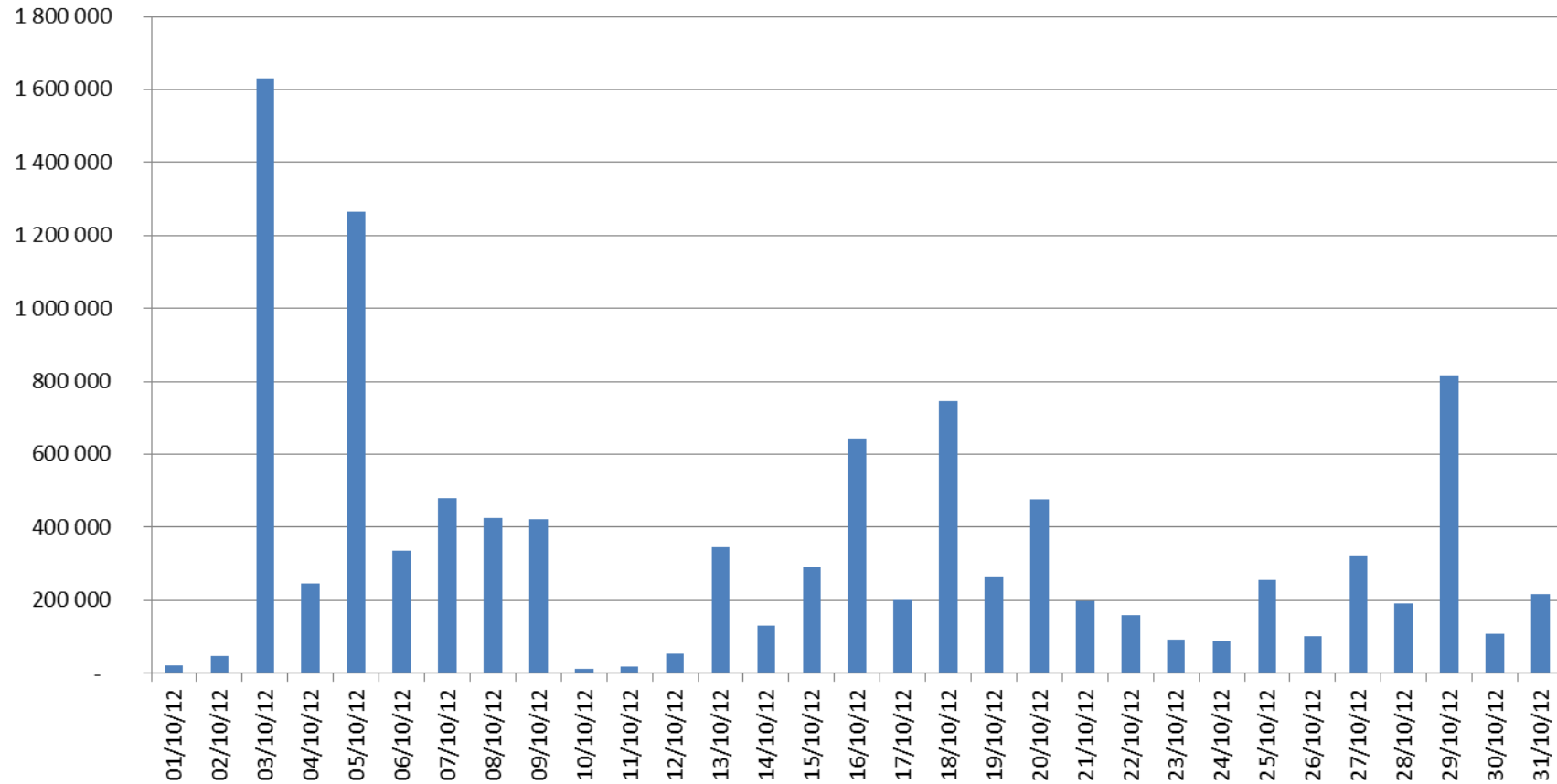*Sum of daily (Value with ATC=∞) - (Historical value)*
The daily values being a Sum of hourly values.

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.

September 2012

Evolution of social welfare that could be gained with no network constraints

October 2012

▶ Additional Social welfare that could be gained with no network constraints:

10,6 M€

Social welfare =   Producer surplus + Consumer surplus + Congestion rent

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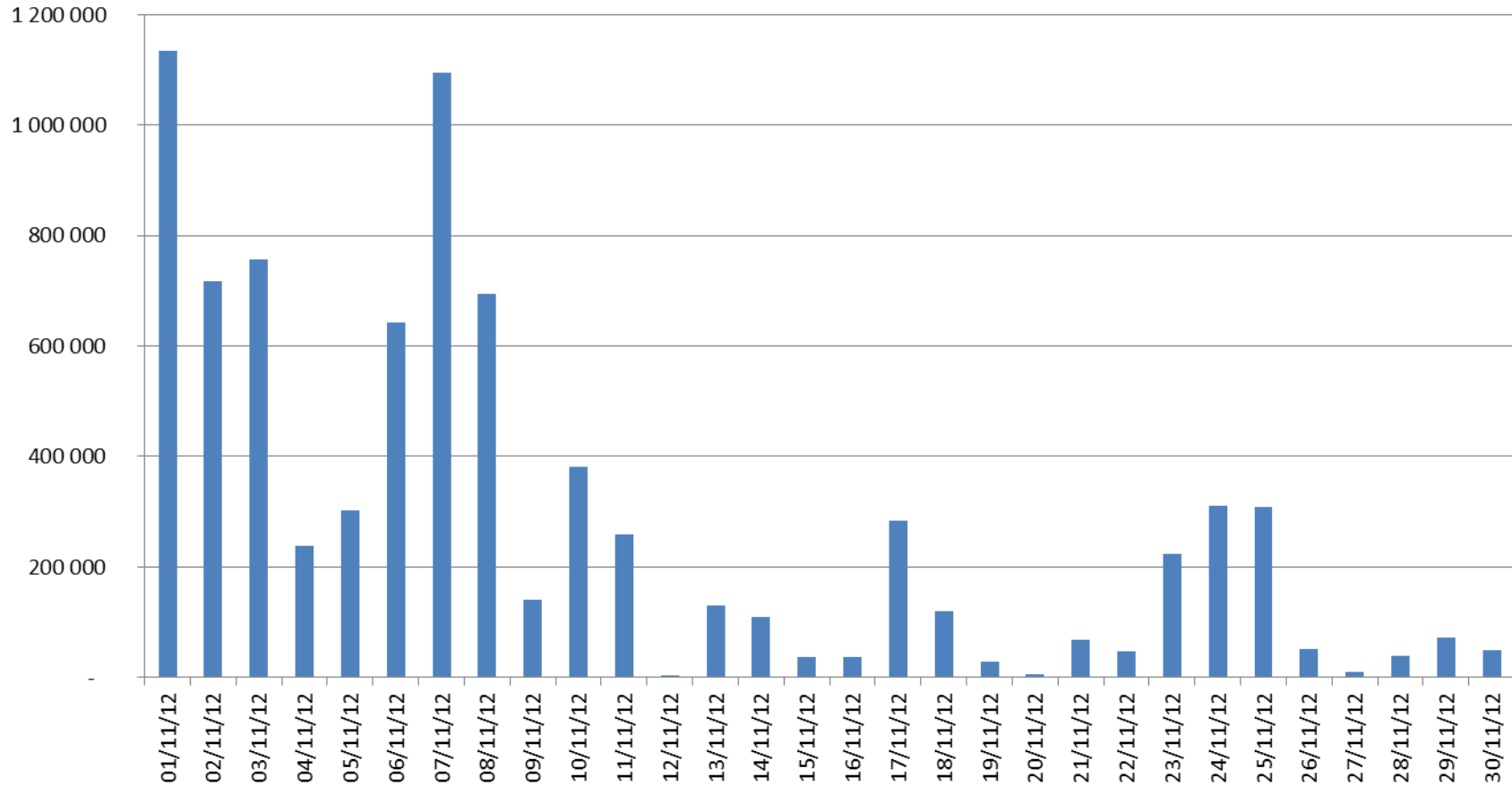|	
Producer surplus	52,2 M€
Consumer surplus	-16,1 M€
Congestion Rent	-25,5 M€

<u>NB</u>: *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 2012

Evolution of social welfare that could be gained with no network constraints

November 2012

▶ Additional Social welfare that could be gained with no network constraints:

8,3 M€

Social welfare =   Producer surplus + Consumer surplus + Congestion rent

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Producer surplus	36,8 M€
Consumer surplus	-6 M€
Congestion Rent	-22,5 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.

November 2012

Evolution of social welfare that could be gained with no network constraints

December 2012

▶ Additional Social welfare that could be gained with no network constraints:

21 M€

Social welfare = Producer surplus + Consumer surplus + Congestion rent

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Producer surplus	110,8 M€
Consumer surplus	-43,2 M€
Congestion Rent	-46,6 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 2012

Evolution of social welfare that could be gained with no network constraints
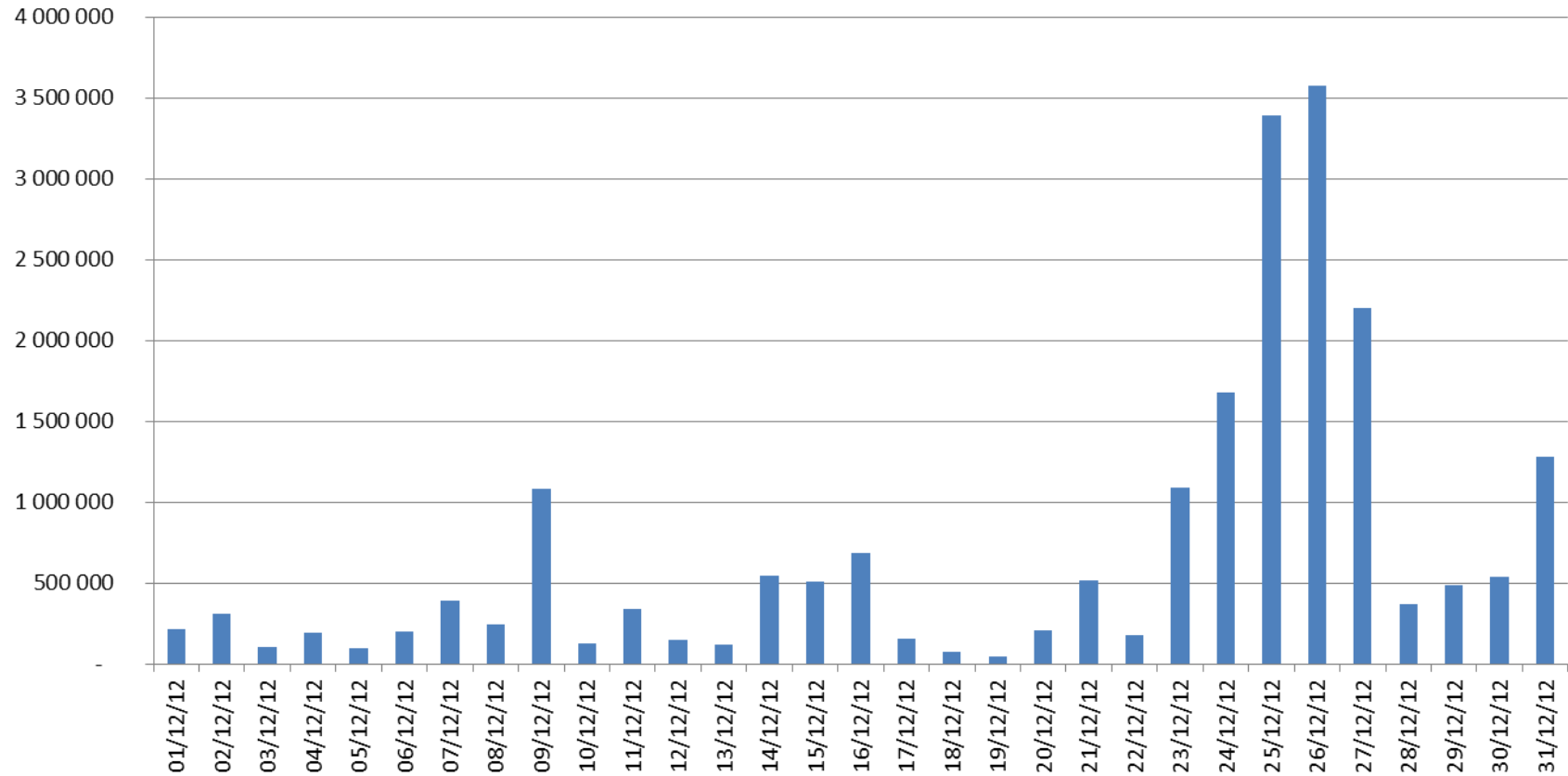
Definitions / explanations

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

▶ The figure shows the additional social welfare that could be gained 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)

▶ NB: The simulations are made with ITVC flows remaining identical.

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
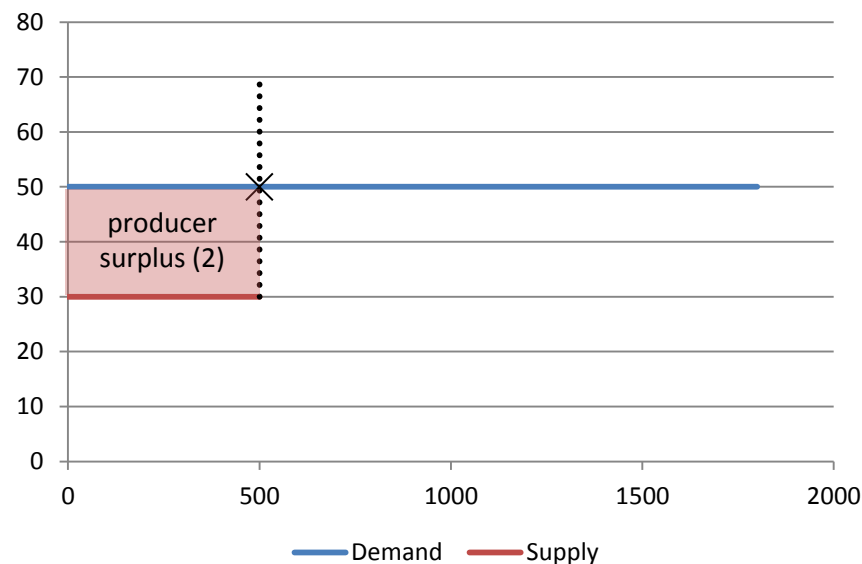# Two isolated markets (zero capacity)
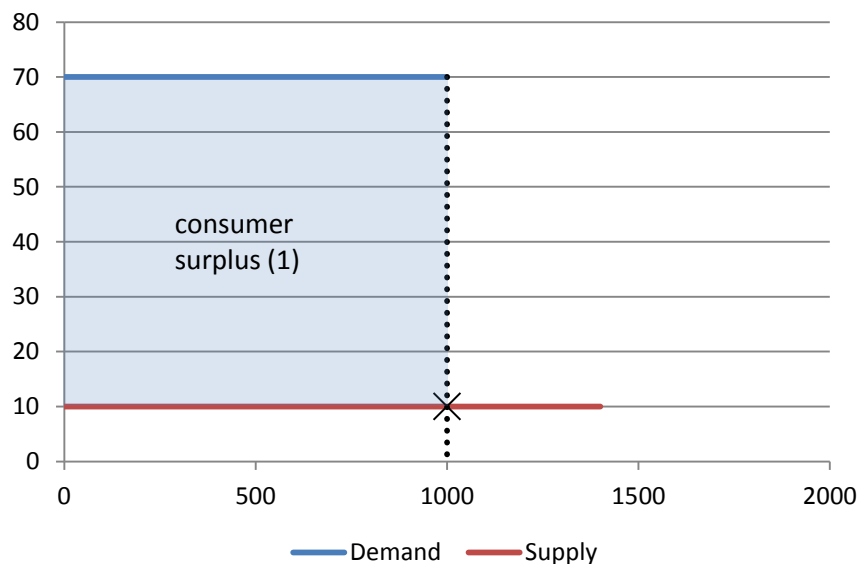
Area 1
MCV: 1000 MW, MCP: € 10

Consumer surplus: € 60K
Producer surplus: € 0

Area 2
MCV: 500 MW, MCP: € 50

Consumer surplus: € 0
Producer surplus: € 10K
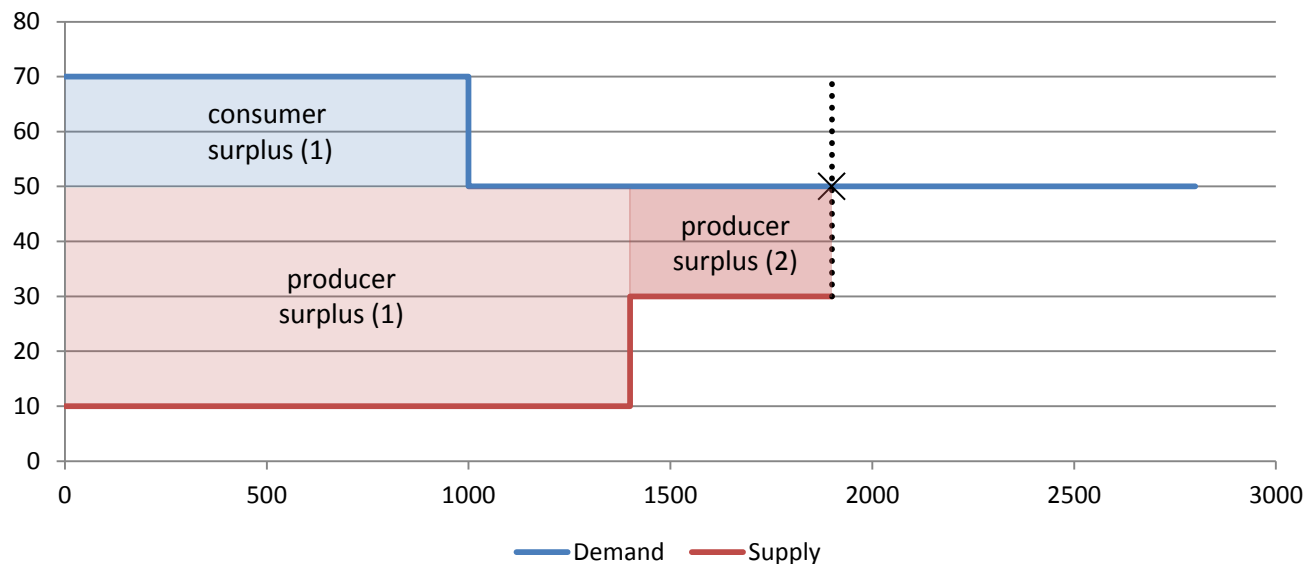
Totals

Consumer surplus: € 60K   Congestion revenue: € 0

Producer surplus: € 10K   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
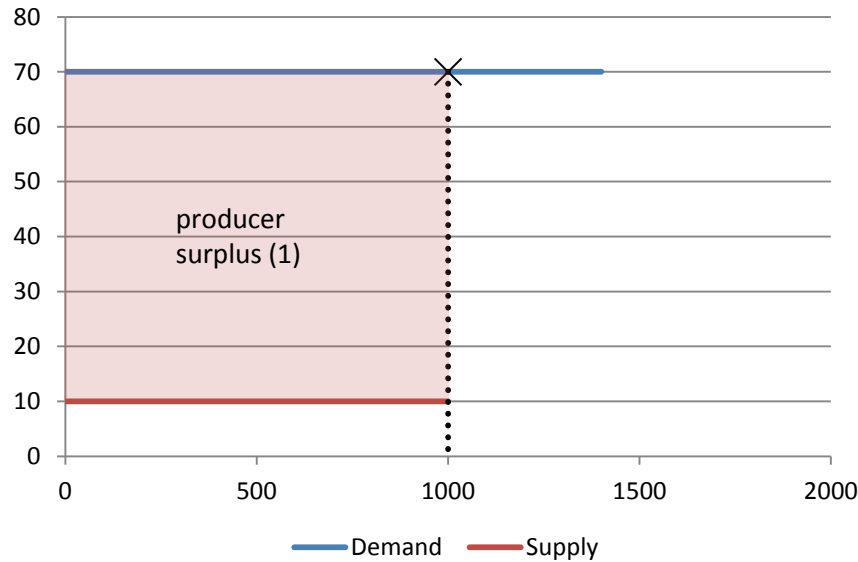Producer surplus: € 10K

Totals

Consumer surplus: € 20K (-40K)   Congestion revenue: € 0

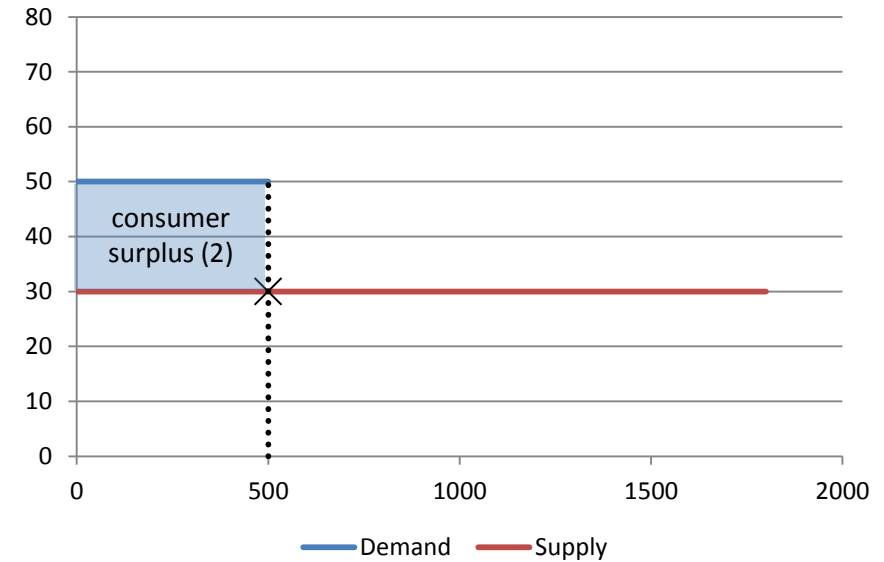Producer surplus: € 66K (+56K)   Social welfare: € 86K (+16K)

Area 1
MCV: 1000 MW, MCP: € 70

Consumer surplus: € 0
Producer surplus: € 60K

Area 2
MCV: 500 MW, MCP: € 30

Consumer surplus: € 10K
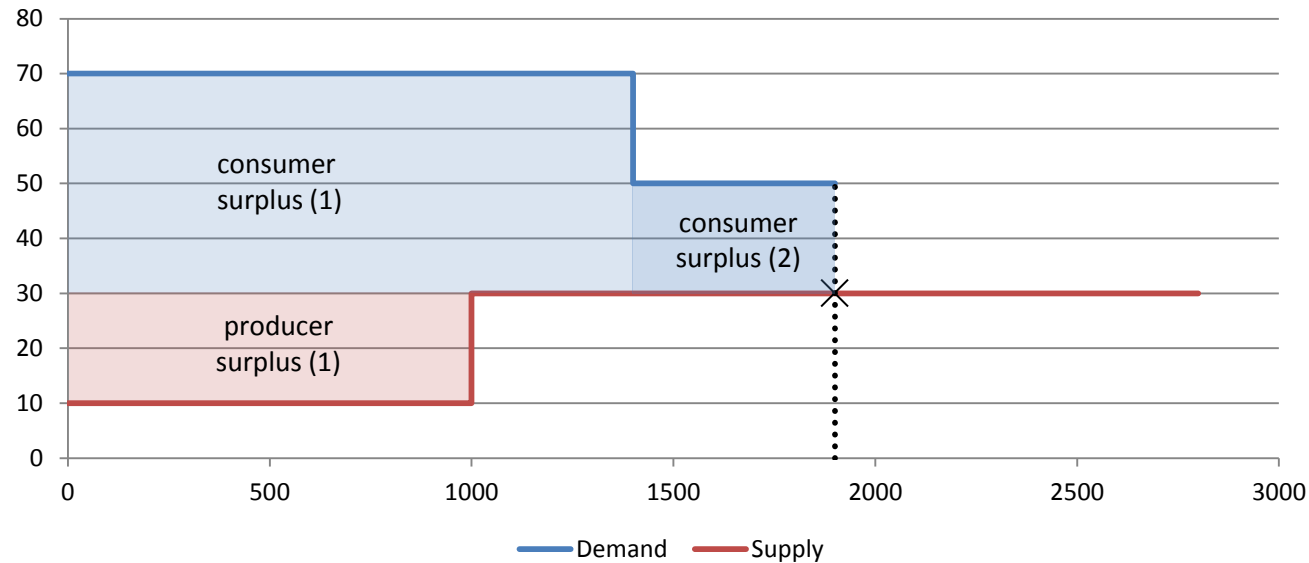Producer surplus: € 0

Totals

Consumer surplus: € 10K   Congestion revenue: € 0

Producer surplus: € 60K   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)   Congestion revenue: € 0

Producer surplus: € 20K (-40K)   Social welfare: € 86K (+16K)