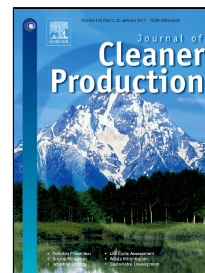


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Coupling of cleaner production with a day-ahead electricity market: a hypothetical case study



Luka Perković, Hrvoje Mikulčić, Luka Pavlinek, Xuebin Wang, Milan Vujanović, Houzhang Tan, Jakov Baleta, Neven Duić

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6 Luka Perković^a, Hrvoje Mikulčić^{*,b}, Luka Pavlinek^b, Xuebin Wang^c, Milan Vujanović^b,
7 Houzhang Tan^c, Jakov Baleta^b, Neven Duić^b

8

9 ^a Faculty of Mining, Geology and Petroleum Engineering
10 University of Zagreb, Zagreb, Croatia
11 e-mail: luka.perkovic@oblak.rgn.hr

12

13 ^b Faculty of Mechanical Engineering and Naval Architecture
14 University of Zagreb, Zagreb, Croatia

15 e-mail: hrvoje.mikulcic@fsb.hr, luka.pavlinek@stud.fsb.hr, milan.vujanovic@fsb.hr,
16 neven.duic@fsb.hr

17

18 ^c MOE Key Laboratory of Thermo-Fluid Science and Engineering, Xi'an Jiaotong University,
19 Xi'an 710049, China

20 e-mail: wxb005@xjtu.edu.cn, tanhz@mail.xjtu.edu.cn

21 **Abstract**

22 During the last 25 years day-ahead electricity markets are continuously expanding and the
23 amount of energy being traded through them is increasing. Moreover, there is a possibility for
24 production facilities to act directly on a day-ahead market as independent market players. The
25 aim of this paper is to analyse the potential for reduction of variable costs of an arbitrary
26 production facility consisting of high-efficient combined heat and power (CHP), grid
27 connection and production unit, thermal and products storage and photovoltaic (PV) panels.
28 Costs are reduced by offsetting the expensive electricity with the use of thermal and products
29 storage and optimization of power flows. Variable costs are, together with the costs of a raw
30 material, directly related to input costs of energy in the form of a fossil fuel derivatives and/or
31 electricity. Two hypothetical cases will be analysed: (1) production facility with installed PV

* Corresponding author. Tel.: +385 1 6168 494; fax: +385 1 6156 940.
E-mail address: hrvoje.mikulcic@fsb.hr (H. Mikulčić).

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