Supplementary Material for "An Integrated Pricing Framework for Optimal Power and Semi-Dynamic Traffic Flow Problem"

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In the supplementary material, we give the detailed information of the numerical examples in the paper "An Integrated Pricing Framework for Optimal Power and Semi-Dynamic Traffic Flow Problem".

I. Sioux Falls Transportation Network

Figure S1 shows the network of Sioux Falls in South Dakota, USA. The area of Sioux Falls is 190.20 km^2 (73.47 sq mi) [S1].

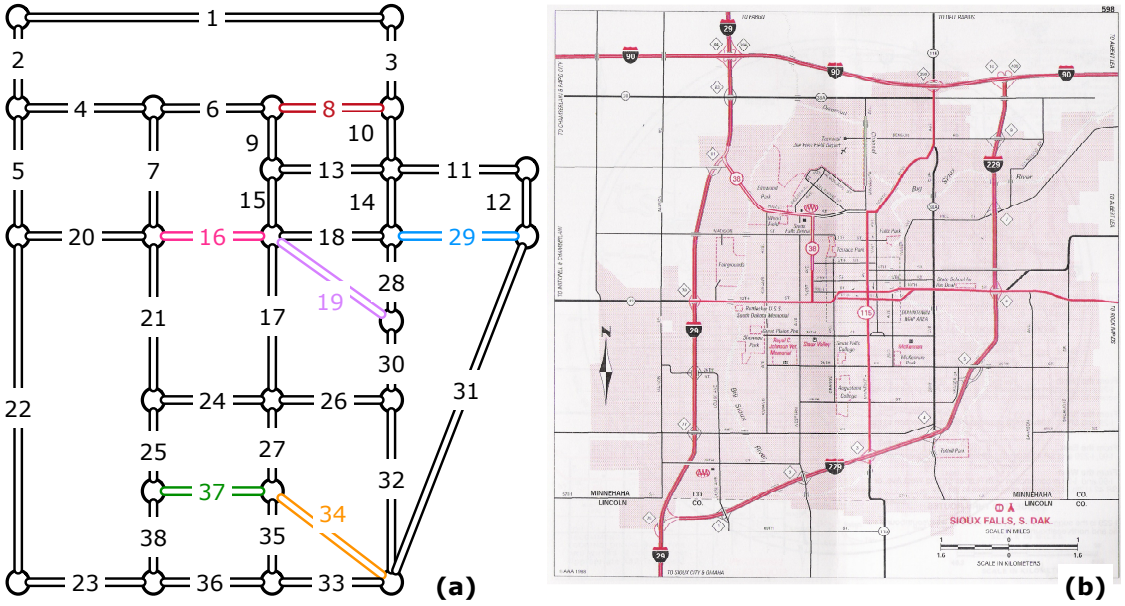

Fig. S1. (a) Sketch of Sioux Falls transportation network. (b) Map of Sioux Falls.

Figure S2 shows the node-arc relationship in the Sioux Falls transportation network [S1].

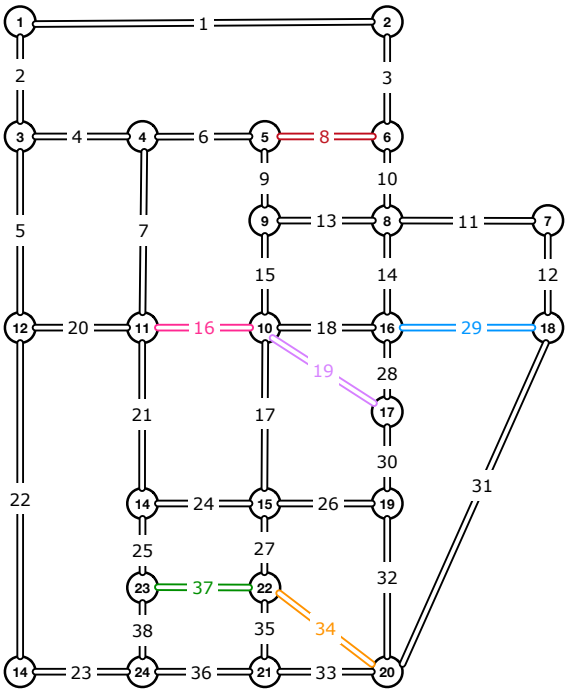

Fig. S2. Node-arc relationship in the Sioux Falls transportation network.

II. 33-NODE POWER NETWORK

Figure S3 shows a 33-node radial distribution network with voltage of 12.66 kV [S2].

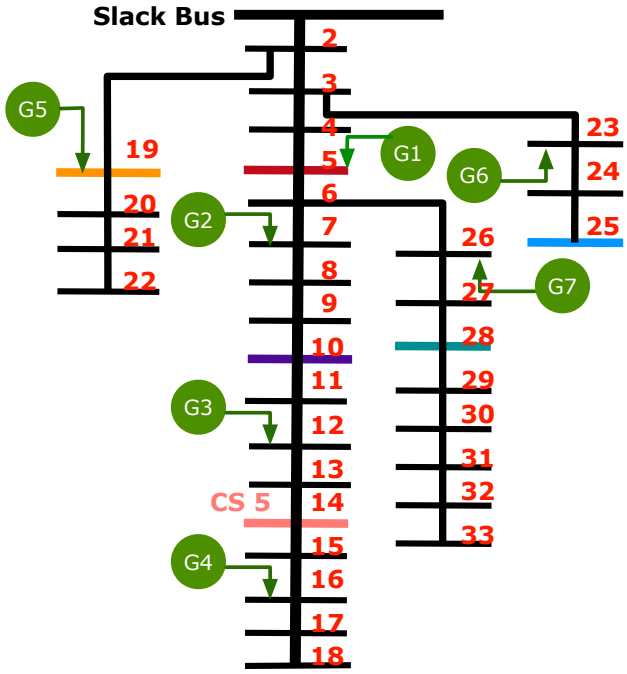

Fig. S3. 33-node power distribution network.

III. COUPLED NETWORKS

Figure S4 shows the Sioux Falls transportation network coupled with a 33-node power network. The coupled nodes/arcs are labeled with identical colors.

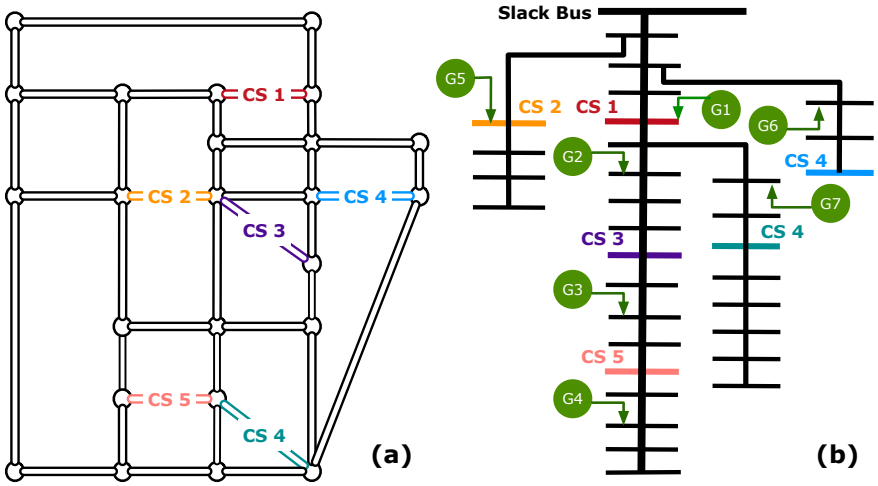

Fig. S4. (a) Sioux Falls transportation network. (b) 33-node power network. The coupled arcs/nodes are labeled in the same colors.

A. *Coupling Relationship*

The coupling relationship is given in the following table.

TABLE S1. Coupling relationship between the power and transportation networks (CS: Charging Station).

No.	Arc in Transportation Network	Node of Power Network
CS 1	8	5
CS 2	16	19
CS 3	19	10
CS 4	29	25
CS 5	34	28
CS 6	37	14

REFERENCES

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[S3] W. Wei, L. Wu, J. Wang, and S. Mei, "Network equilibrium of coupled transportation and power distribution systems," *IEEE Trans. Smart Grid*, pp. 1–1, 2017.

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