

# Coalition formation in transmission expansion planning

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## Abstract-

The study of a decentralized coalition formation scheme in a specific power systems transmission expansion scenario is the purpose of this paper. We define first who are the agents in the expansion game providing a decentralized coalition formation scheme based on bilateral Shapley values. Finally, we allocate the total costs of expansion among the agents, based on the coalition history, and we compare our method with a centralized scheme. See Javier Contreras's personal homepages: <http://www.iit.upco.es/~javierc> and/or <http://www.eecs.berkeley.edu/~javier> for more details.

**Index Terms-** Transmission planning, cooperative game theory, multi-agent systems

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