



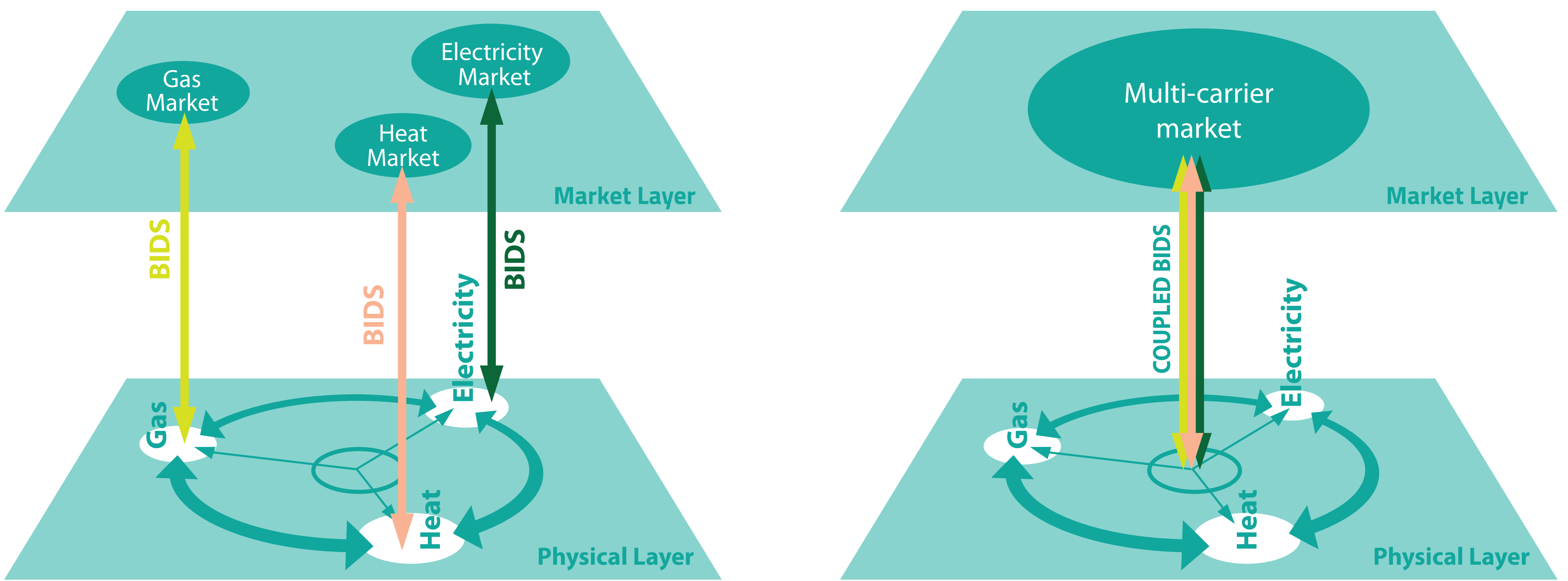
Empowered by: KU Leuven, VITO, imec & UHasselt

Multi-Carrier Energy Markets

A Multi-Energy System Calls for Multi-Energy Market Models

Scope

- Implementation of multi-carrier energy market
- Case study: Belgian national gas and electricity markets, and a single heat market of the size of the Thor campus



Results:

A simultaneous day-ahead multi-carrier market is able to increase the social welfare compared to a series of sequential day-ahead markets as:

- It eliminates the need for price forecasting, and therefore also the associated errors that occur in sequential markets;
- It is able to use the flexibility in one energy carrier to clear another one through multi-carrier technologies;
- It allows for a type of order acceptance configurations that cannot be realized in a sequential market set-up.

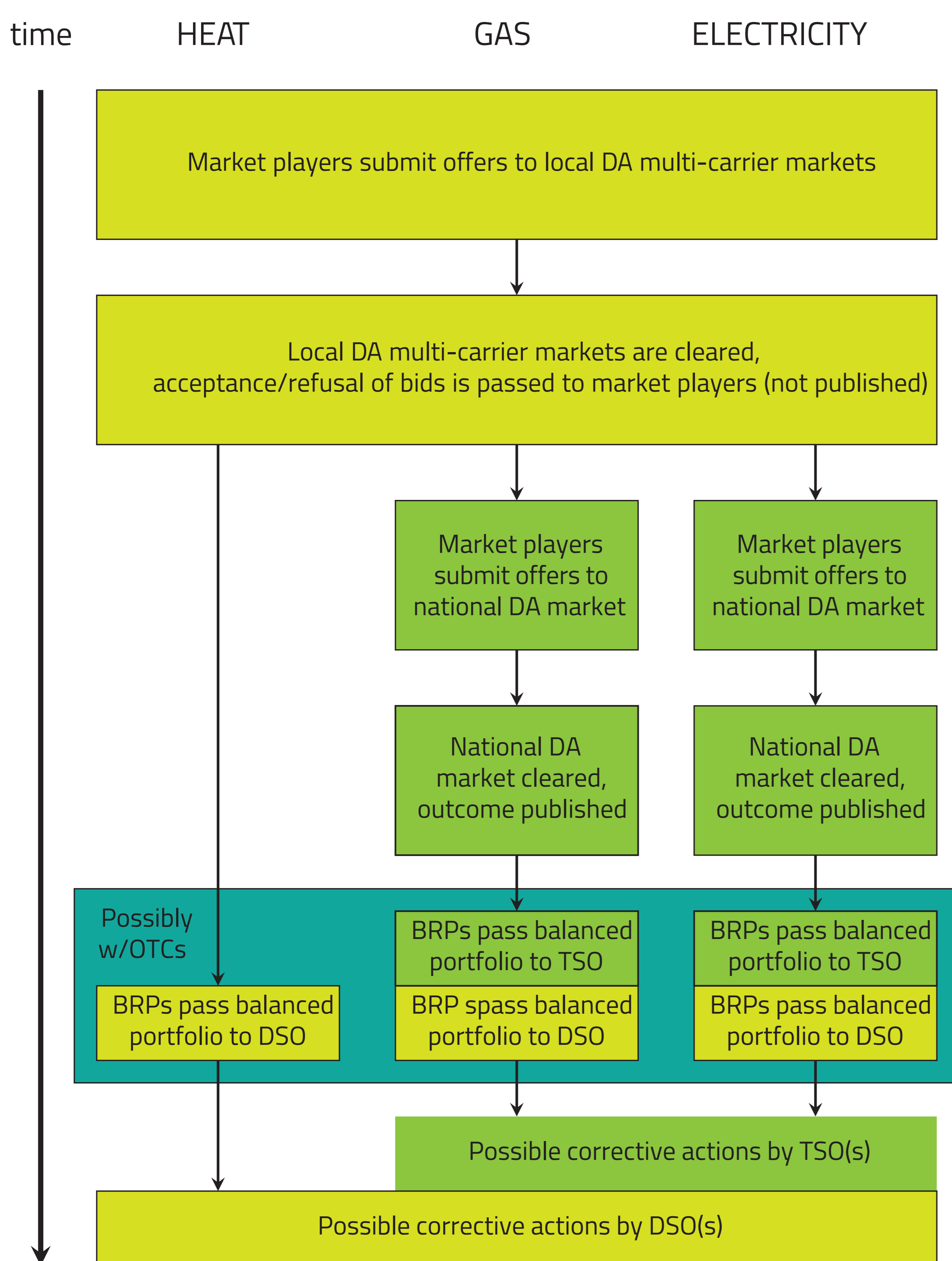


Figure 2.a: Two-step approach: a local electricity-gas-heat market before a national electricity and gas market

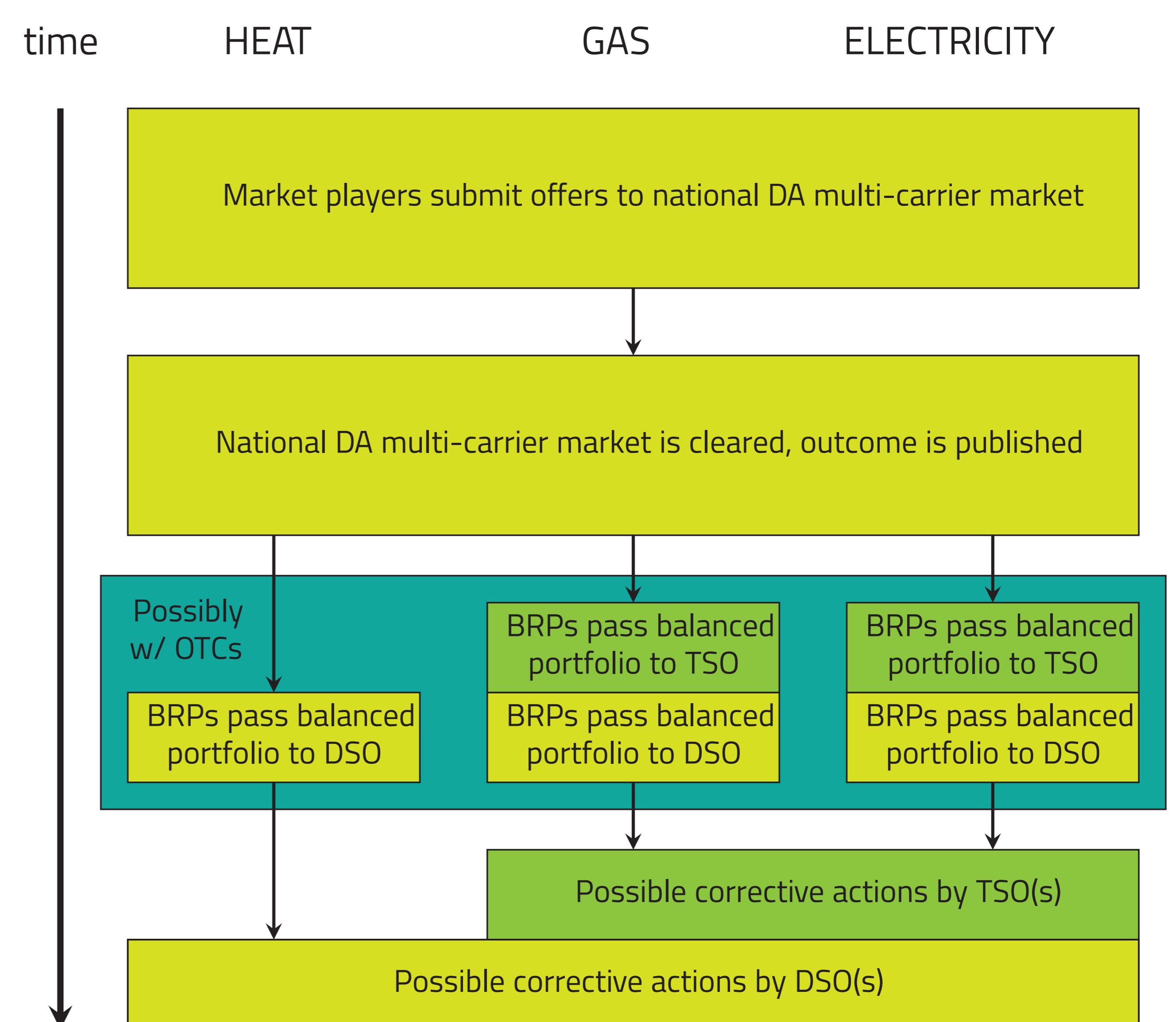


Figure 2.b: Integrated approach: a single national electricity-gas-heat market

