# A scenario elicitation methodology to identify the drivers of electricity infrastructure cost in South America

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Developing a set of scenarios to assess a proposed policy or future development pathways requires a certain level of information, as well as establishing the socio-economic context. As the future is difficult to predict, great care in defining the selected scenarios is needed. Even so it can be difficult to assess if the selected scenario is covering the possible solution space. Instead, this paper's methodology develops a large set of scenarios (324) in OSeMOSYS using the SAMBA 2.0 (South America Model Base) model to assess long-term electricity supply scenarios and applies a scenario-discovery statistical data mining algorithm, Patient Rule Induction Method (PRIM). By creating a multidimensional space, regions related to high and low cost can be identified as well as their key driver. The six key drivers are defined a priori in three (high, medium, low) or two levers (high, low): 1) Demand projected from GDP, population, urbanization and transport, 2) Fossil fuel price, 3) Climate change impact on hydropower, 4) Renewable technology learning rate, 5) Discount rate, 6) $CO_2$ emission targets.