IF YOU DO WHAT YOU ALWAYS DID, DO YOU GET WHAT YOU ALWAYS GOT? PERFORMANCE IMPLICATIONS OF STATUS QUO BIAS IN SWISS ENERGY INVESTMENTS

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Overview

Albert Einstein once said: "If you always do what you always did, you will always get what you always got". The investment patterns of many traditional electrical utilities in Switzerland show that their investment managers apparently supported this position. Did these utilities really receive what they expected?

It is a standard assumption in energy economics that electric utilities invest in projects which promise a higher internal rate of return (IRR) than the firm's weighted average cost of capital (WACC). Since energy companies tend to have a higher cost of capital than institutional or private investors, their expected IRR is also high, which, at least in the past, led to continued preference for larger and riskier projects, such as gas or coal-fired power plans, rather than renewable energy projects, such as solar or wind (Helms et al., 2015; Ondraczek, Komendantova, & Patt, 2015). This paper aims to find out whether such preference to stick to the status quo payed off for Swiss utilities by investigating the performance of realised projects in Switzerland and abroad. Twelve fossil and renewable energy investment projects of Swiss utilities in Switzerland, Germany, Italy, France and Bulgaria implemented between 2004 and 2014 serve as case studies for the analysis.

The paper is organised as follows. First, the method is explained in more detail: the process of choosing projects for the analysis, the process of collecting input variables for calculating IRR for these projects, and the approach to estimating missing data points. Second, the WACC of the selected companies is compared to the rates of return of the analysed projects. These results are explained with reference to key variables that affected the performance of the power plants: demand and corresponding load hours; wholesale electricity prices; currency exchange rates; policies that caused either higher revenues through feed-in tariffs and certificates or lower revenues through changes in regulation. The results are relevant for understanding the role of market, currency and policy risks for corporate decisions about investments in new energy projects.

Methods

To explore the gap between expected and actual risk-adjusted returns of fossil vs renewable energy investments, the research employs a cross-case study analysis of 12 specific investment projects conducted by Swiss utilities in the period 2004-2014. The expected IRR is calculated based on the data collected from the media announcements at the time of the project launch, such as, for instance, expected production amounts. The realized IRR of these projects is calculated based on the real data about project performance, the missing variables are estimated based on the general market data. The calculations for the remaining years of the project implementation are based on the average performance of the project to date and market conditions of the last year. This means, that, for instance, the amount of policy support or electricity prices are assumed to be the same as in the last year, while the production amounts are estimated at average. The derived IRR is then compared to the WACC of the companies that conducted these projects.

Results

Expected returns on most of the analysed projects were significantly higher than the WACC of the respective companies. The exception to this were two wind projects in Germany where expected returns were lower than WACC of the company, and the company still implemented the project because of very low risk with the guaranteed low feed-in tariff.

Realized returns corresponded to expected ones only in Switzerland. In the rest of the cases, realized returns were lower than expected ones and often lower than WACC. Reasons for mismatch between expected and realized returns in case of wind energy: overestimation of weather conditions for wind energy in all cases except Switzerland; policy changes (in case of Bulgaria – retroactive). Reasons for mismatch between expected and realized returns for gas projects: overestimation of demand, disregard of wholesale prices trends. Note: annual

reports describe market conditions as difficult before, during and after implementation of the projects, but investment strategy stays mostly the same.

The results show lower realised rates of return for fossil fuel projects, while the patterns of renewable energy plants performance vary across countries. Market, currency and policy risk all play a role in explaining the gap between expected and realised returns of the analysed projects. However, the lack of changes in investment strategy despite the knowledge about market conditions seems to be the most important factor creating mismatches between expectations and reality.

Conclusions

Doing what was always done does not seem to have brought about the expected results in the case of Swiss utilities in recent years. The high cost of capital and corresponding expectations with regard to the IRR of new projects are based on expectations formed by market conditions which have changed. Both renewable and fossil fuel power projects are affected by a number of risks. While large fossil power plant projects suffer from a significant decrease in demand, renewable energy projects are subject to a number of risks related to policy changes. Failing to update investment strategies and sticking to the status quo under changing market conditions may lead to inferior financial performance.

The paper has important implications for research in energy economics, as most energy economic models work either with expected future returns or with realized past returns, while systematic comparisons between one and the other could yield important insights about possible biases in investor behaviour, and hence induce learning processes to improve future investments.

The paper might also have policy implications. While Swiss utilities mainly invest in projects with high return/high risk profile, two cases of wind investments in Germany show that low risk projects may be attractive even for such companies with high WACC. Stable support policies (as feed-in tariff for wind in Germany) may reduce the risk and respective return expectations, thereby attracting investors to renewable energy sector at lower cost. Policies that offer high returns (as quota system in Italy), but do not allow to precisely calculate those returns, may increase risk expectations and minimum return requirements. This can increase the policy cost. Finally, attractive, but unstable policies (as in the case of feed-in tariff in Bulgaria) may attract only a limited number of investors.

References

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