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The Cost of Capital for Renewable Generation Capacity Ownership

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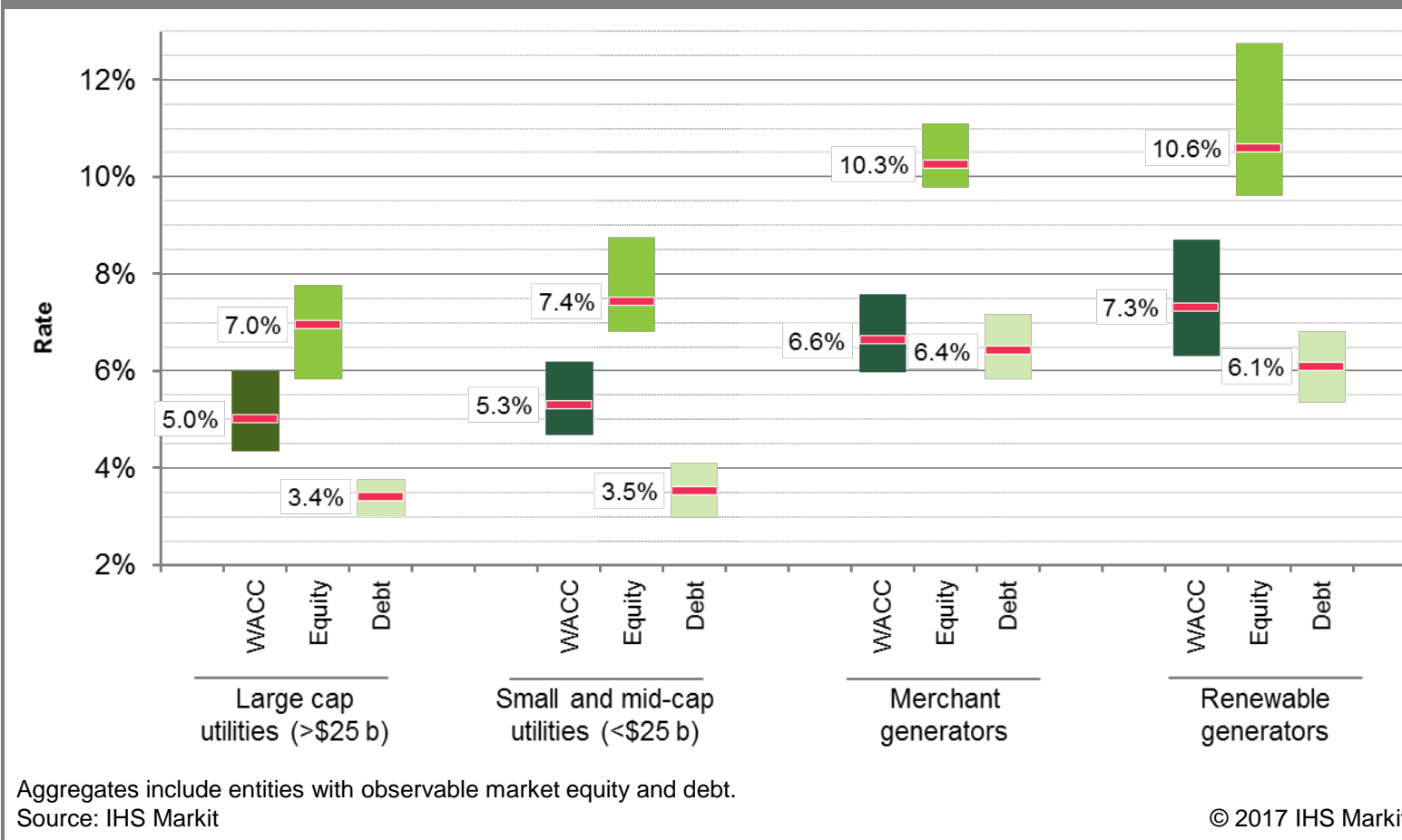
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Overview

- IHS Markit assessed for EIA the cost of capital for renewable companies in the broader context of power-generation owning companies' cost of capital in the US.
- Study used observable and reported market data (equity, debt, company financials) and standard financial approaches to estimate the weighted average cost of capital (WACC).
- Estimates for companies without observable market data were based on comparables aggregated by type.
- Estimates were applied to generating-unit level ownership in order to develop averages by region and type.
- Additional portions of the study examined sensitivities for scenarios around tax rates and tax credits on the costs to finance renewables.
- Full study will be available on EIA's website.

Power sector company estimates

Cost of capital aggregates and ranges by owner type

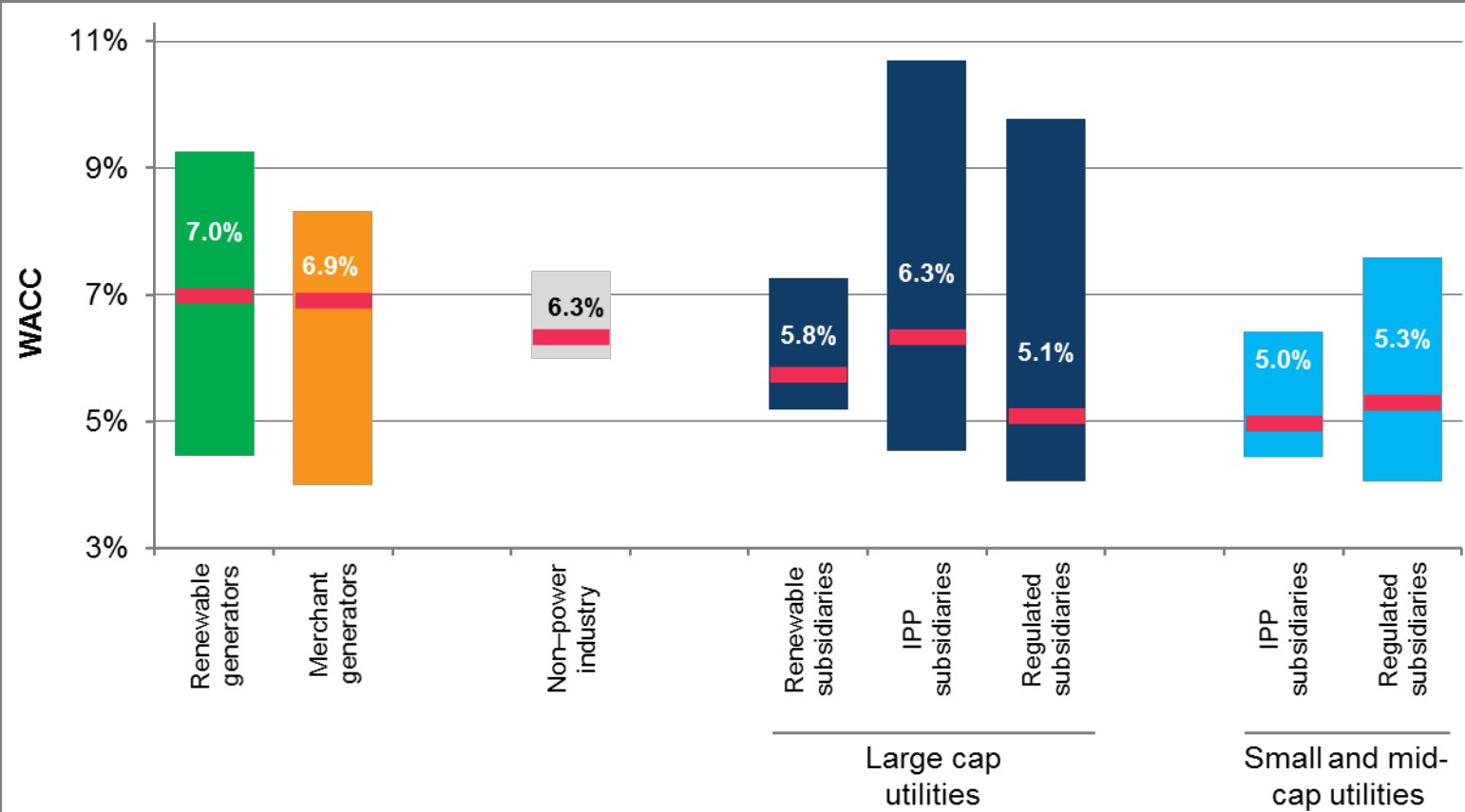


Comments

- Renewable generators show the highest cost of capital of power-sector company types. Possible reasons:
 - Smaller and newer companies
 - Newer business models (e.g., “yieldcos”)
 - Lower leverage than merchant generators
- The largest utilities (>\$25 in equity market cap) exhibit the lowest cost of capital. Possible reasons:
 - Broader diversification
 - Greater liquidity in capital markets

Company type averages and share

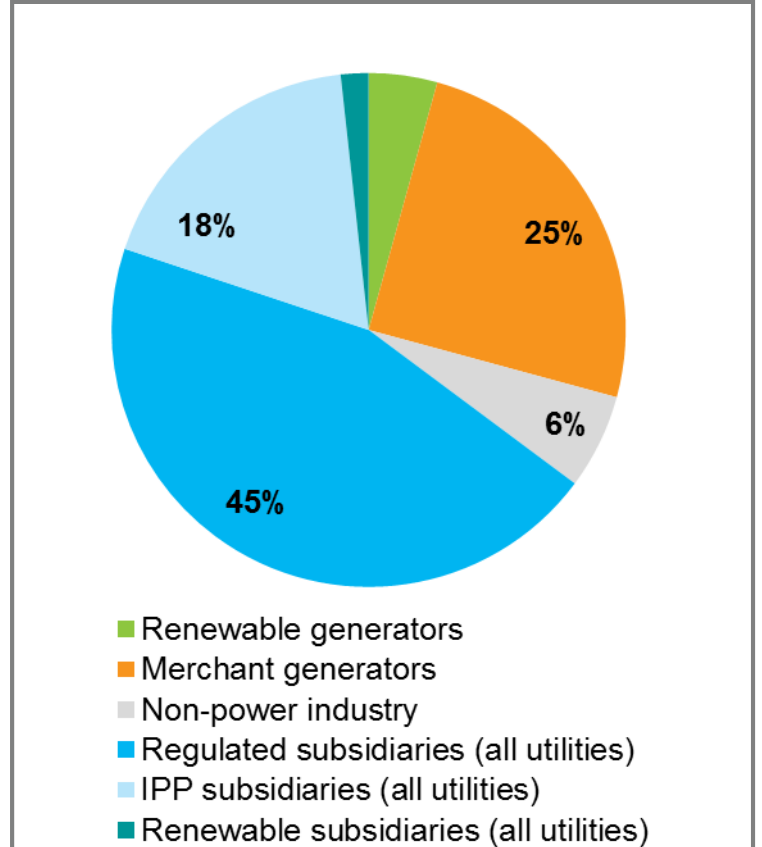
Cost of capital ranges and capacity-weighted averages



Source: IHS Markit

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Share of owned capacity

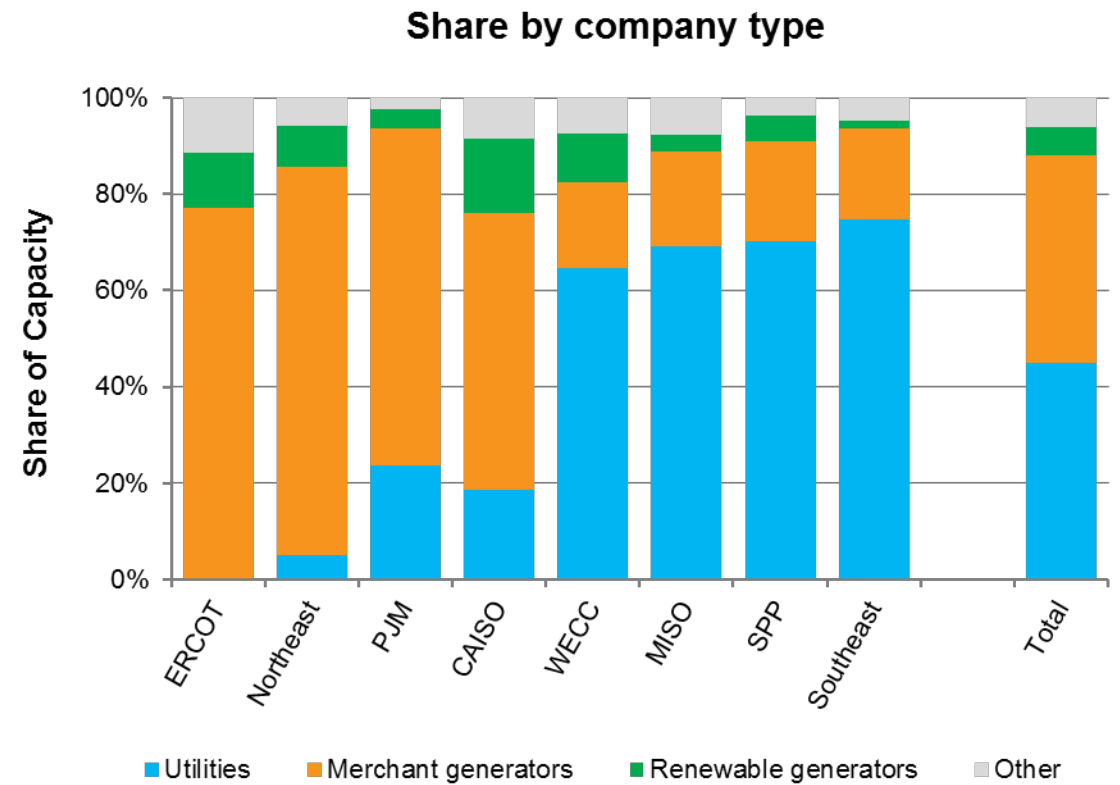
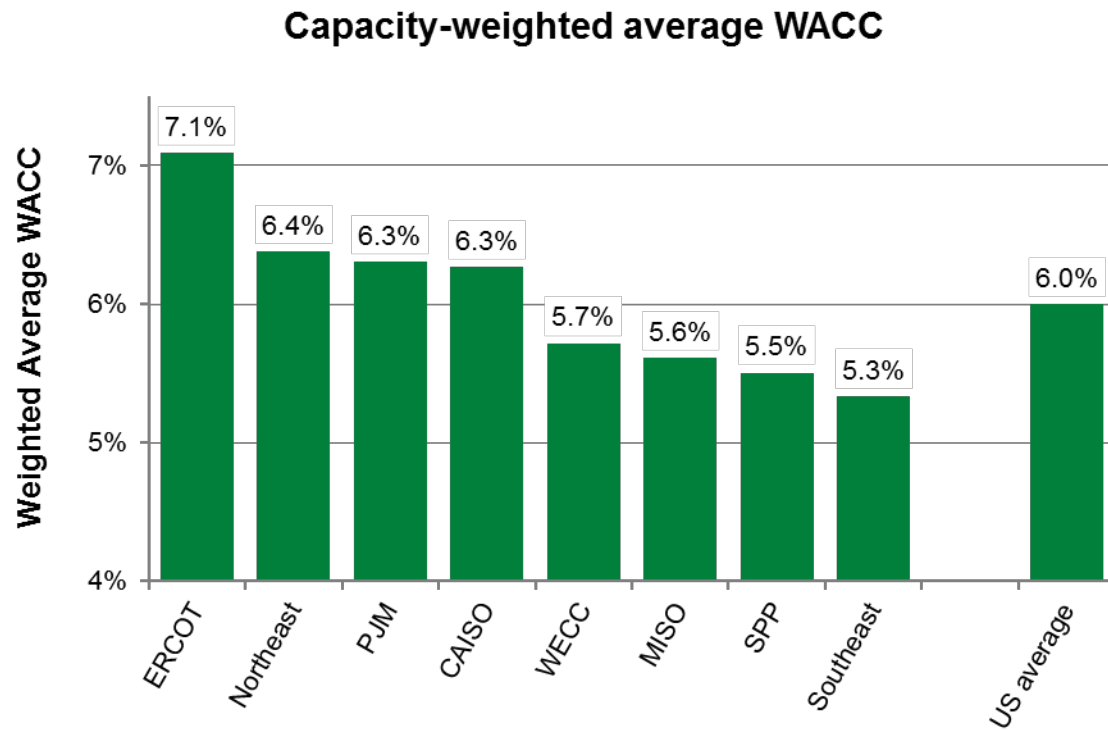


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Regional averages and share

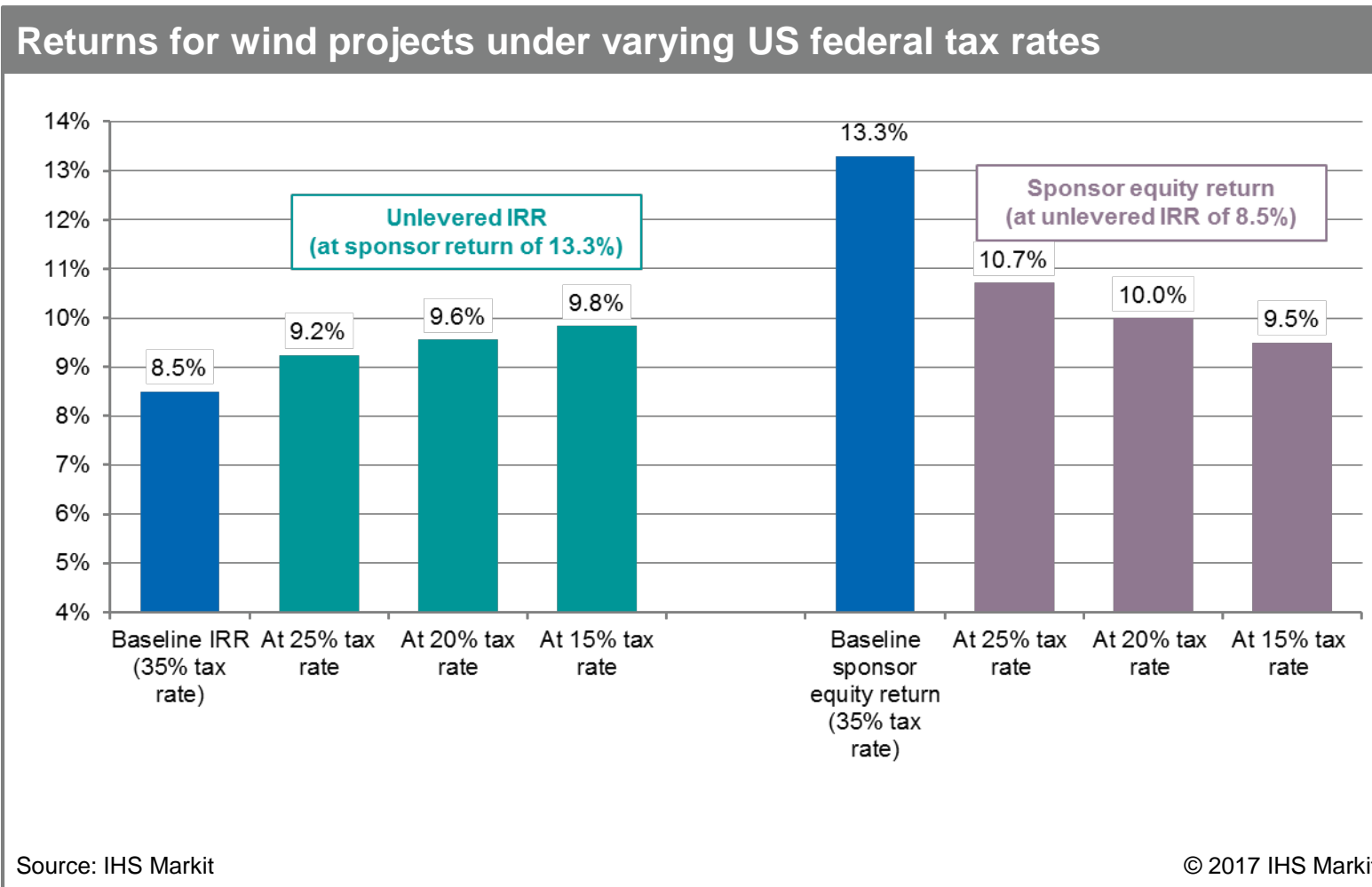
Regional average cost of capital and share by type



Source: IHS Markit

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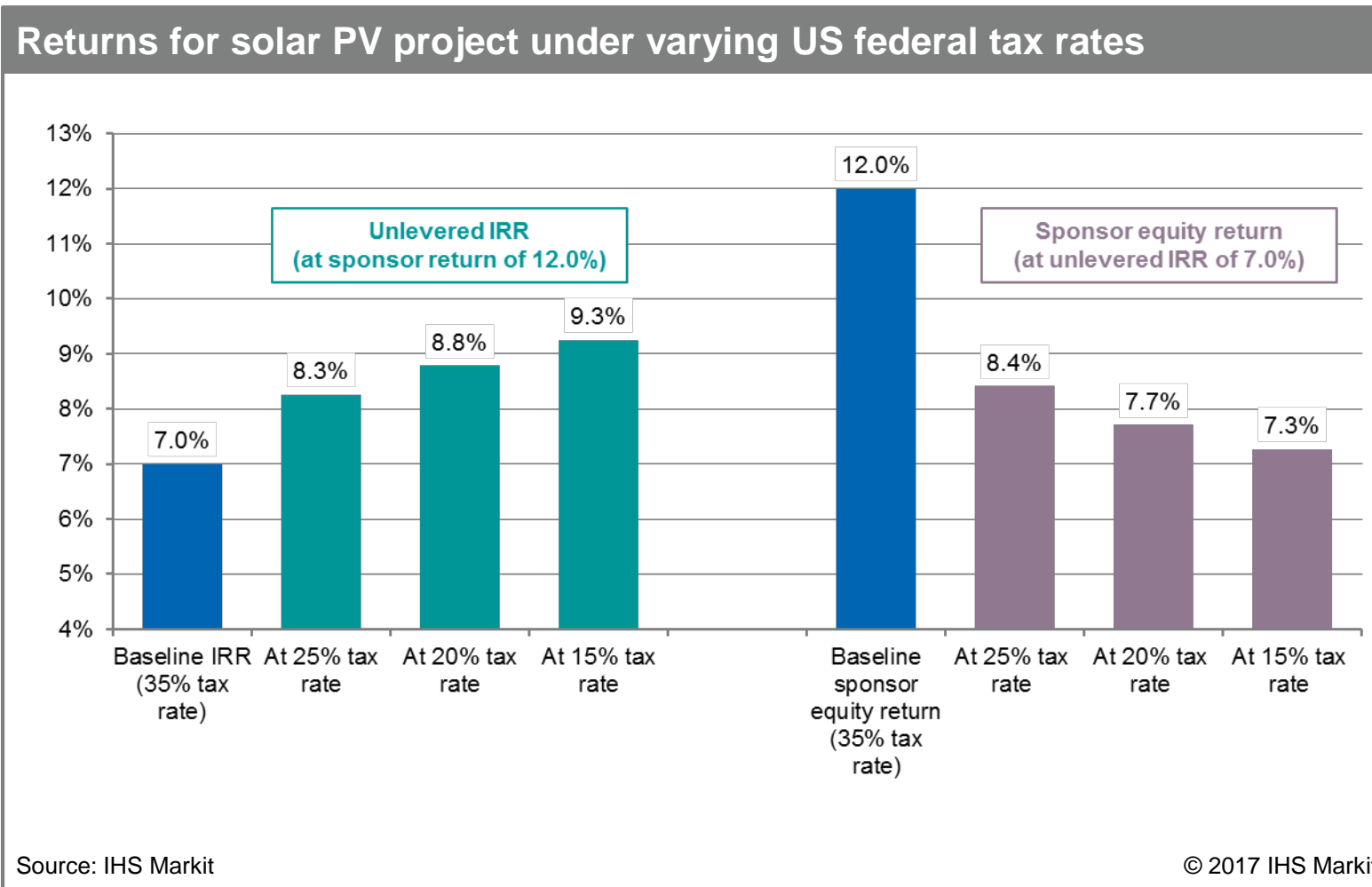
Wind return tax sensitivity



Notes

- Pro forma wind project assumptions:
 - 8.5% unlevered IRR
 - 13.3% Sponsor equity return
 - 6.0% Sponsor debt, backlevered (64% of sponsor contribution)
 - 8.5% Tax equity rate, 55% of initial capital, 9.5 years
 - 38% capacity factor, 30 year life
- As tax rate decreases, either
 - Required unlevered IRR must increase to maintain sponsor return (cost of energy goes up), or
 - Sponsor return decreases if 8.5% IRR is maintained (cost of energy stays the same)

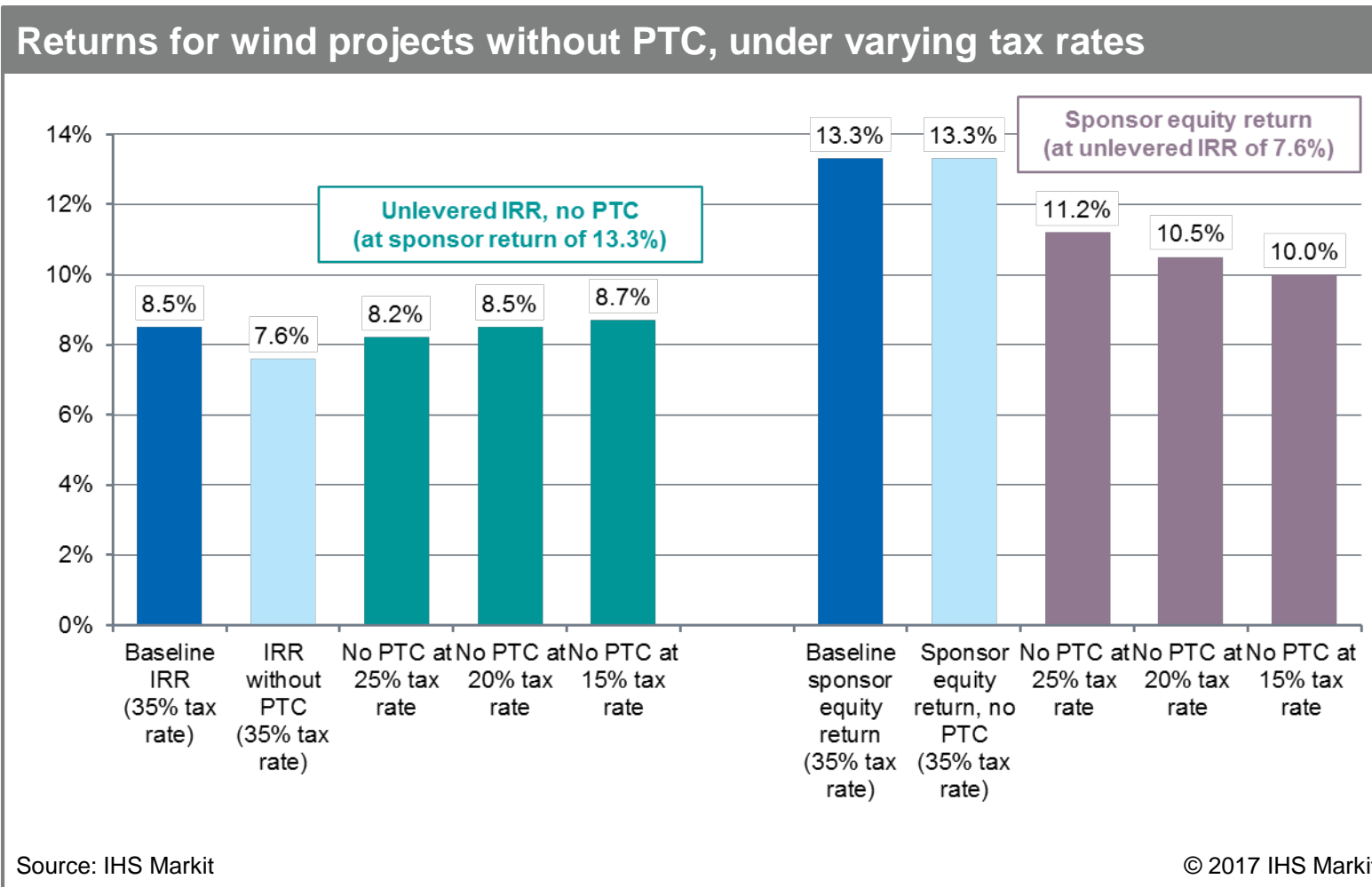
Solar PV return tax sensitivity



Comments

- Pro forma solar PV project assumptions:
 - 7.0% unlevered IRR
 - 12.0% Sponsor equity return
 - 5.0% Sponsor debt, backlevered (73% of sponsor contribution)
 - 7.0% Tax equity rate, 50% of initial capital, 5 years
 - 22% capacity factor, 30 year life
- Directionally the results are similar to those of wind, though impact on returns is magnified

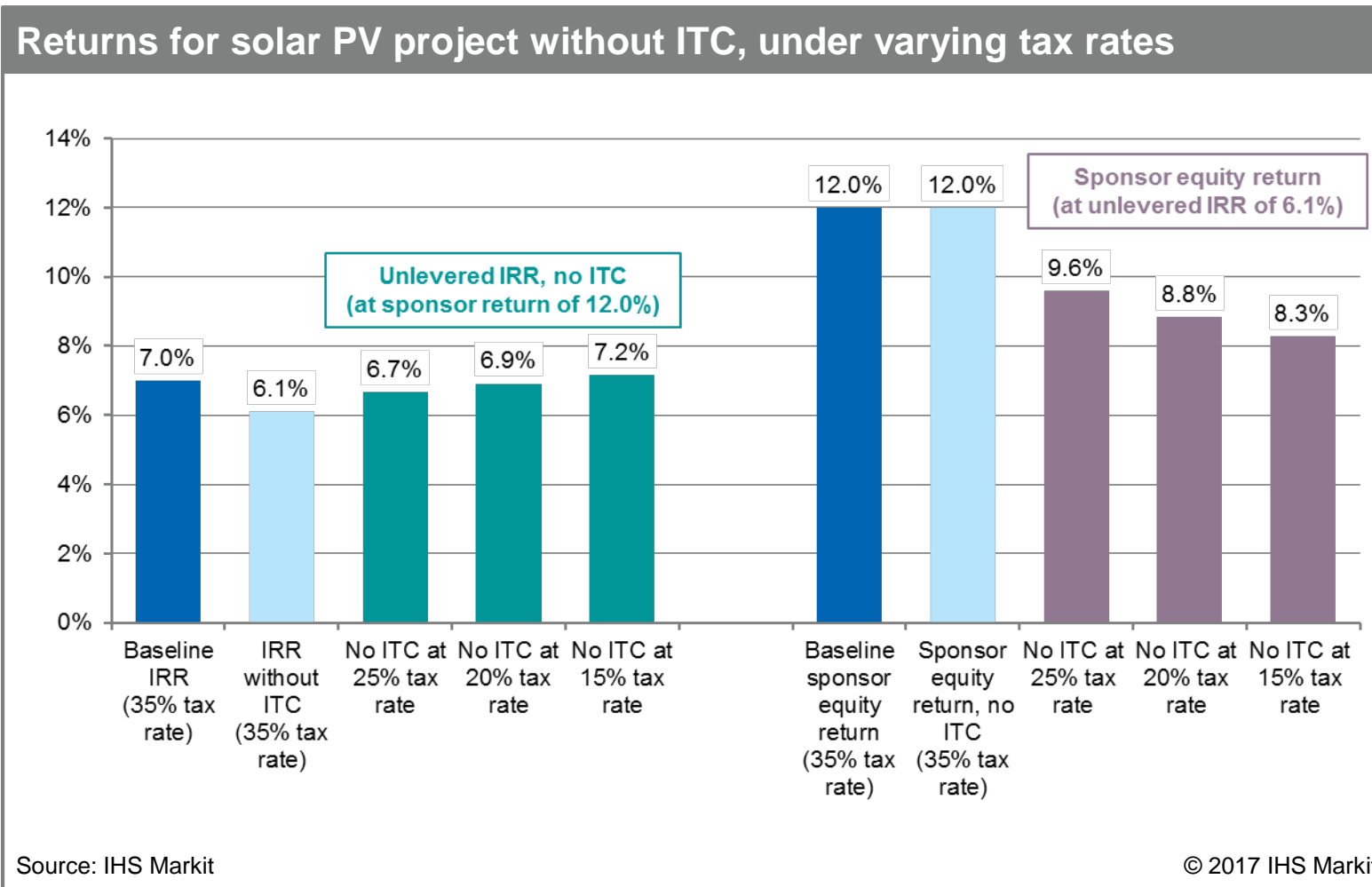
Wind return PTC sensitivity



Notes

- Sensitivity around non-tax credit (PTC) scenarios assumes no need for tax equity investment
- Tax equity capital generally more expensive than other capital available to project sponsors
- Required return drops almost 1 percentage point, keeping sponsor returns constant
- Impact of potential tax reductions muted without tax credits

Solar PV return ITC sensitivity



Comments

- Sensitivity around non-tax credit (ITC) scenarios assumes no need for tax equity investment
- Required return drops almost 1 percentage point (similar to wind), keeping sponsor returns constant
- Impact of potential tax reductions muted without tax credits

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