



IBERDROLA
RENEWABLES

Sustaining Momentum:

How the voluntary market can continue to drive renewables growth

By Peter Toomey

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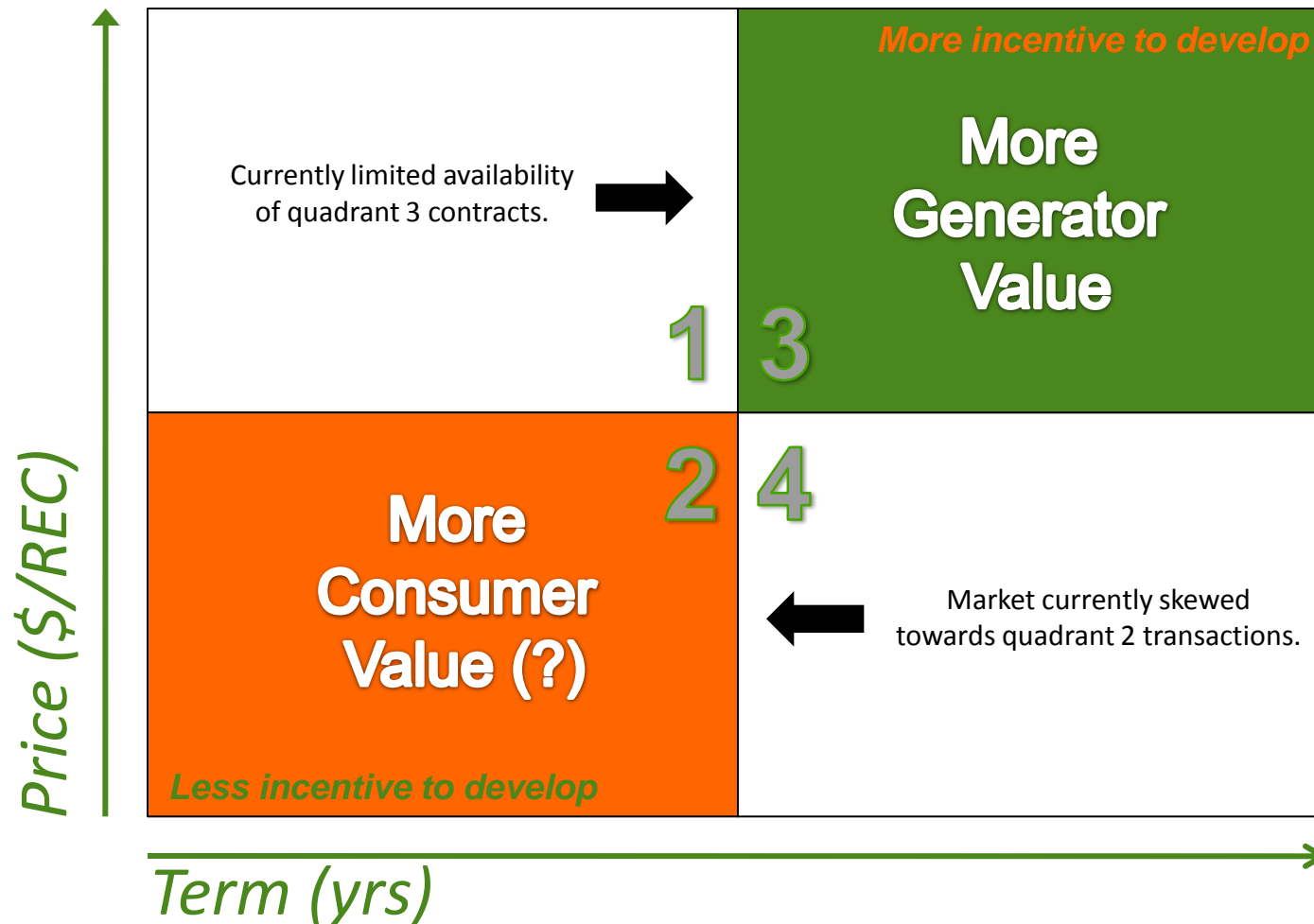
Historical Contributions of Voluntary Market

- Increased public awareness for renewables
- Provided consumers with clean energy choices
- Built support for public policy at state and federal level
- Proved concept of tradable “environmental attributes”
- Provided generators with valuable revenue stream
- *ALL CONTRIBUTED TO BOOM IN RENEWABLES MARKETS!!!*

Recent Voluntary Market Observations

- Trend away from regional and project specific transactions
- Focus on short-term, national REC purchases
- Abundant supply led to depressed prices in national market (\$1-3/REC)
- Economic crisis has had an impact on green power demand
- National RES policy uncertainty creates supply uncertainty
- Product emphasis on indirect carbon vs. new project development

Distribution of value by REC transaction type



Why “Quadrant 3” is critical to developers

- 100MW wind project is \$250M, 20-year capital investment
- Expected 20-year output = 5,500,000 MWhs
- Pre-crisis wholesale electricity prices ranged from \$50 to \$75/MWh
- Economics vary significantly by project and region
- Many new projects require REC premium of \$25+ per MWh
- PPA or REC-only contract securing long-term value is highly desirable

Observed problems with “Quadrant 2” focus

- Doesn't provide developers with revenue adequacy or certainty
- 1-year sale of 100,000 RECs = only 1.8% of expected 20-year output
- Sets customer expectations in opposition to developer needs
- Calls into question voluntary market “story” - i.e. promotes new projects
- Emphasizes price competition rather than product differentiation
- Raises questions about vol. market future in world of higher REC prices

Five obstacles to promoting “Quadrant 3”

1. **Price-elasticity:** How will demand be impacted by higher REC prices?
2. **Value proposition:** Why will vol. customers make the commitment?
3. **Credit-worthiness:** Long-term contracts w/ vol. market participants
4. **Intra-market Competition:** Compliance market faced with ACPs
5. **Inter-market Competition:** Carbon offsets, onsite renewables, etc.

The Way Forward...

- Re-educate customer on value of incentivizing new projects
- Differentiated products – i.e. “Green Power” vs. “Project Enabling”
- Focus on regional and project specific demand – i.e. “de-commoditize”
- Smaller projects and emerging technologies
- Preference for utility & customer aggregation over C&I
- Product and biz model innovation (pre-pay, equity placement, etc.)

In conclusion...

- All REC revenues are valuable to developers!!!
- However, no market is sustainable if it does not support production
- Refine messaging to promote “Quadrant 3” purchases
- Vibrant “Quadrant 3” will also smooth transition to era of REC scarcity
- Voluntary market can still play central role in growth of renewables
- Will require challenging assumptions and product innovation

Peter Toomey
Manager, Environmental Markets
Iberdrola Renewables, Inc.
Peter.Toomey@iberdrolausa.com
215.266.4529

