


The Rising Role of Corporate Renewable Energy: A Sustainability Solution & Strategic Opportunity

Timothy Juliani

*Director of Corporate Engagement &
Sustainability*

Edison Energy



The information contained in this communication is for general purposes only and is not intended and should not be construed, as legal, accounting, or tax advice or opinion provided by Edison Energy. The material contained herein may not be applicable or suitable for the recipient's specific circumstances or need and should not be used as a substitute for consultation with a professional accounting, tax, legal or other duly licensed advisor.

The information contained herein is intended to communicate the current state of the renewable energy markets across various geographies. Any information contained within this document is subject to change because of, but not limited to, regulatory policy, federal and state tax legislation, commodity pricing, dynamics in the capital markets, commercial terms unique to each project and overall market conditions.

Any marketing or solicitation included herein for or related to a National Futures Association jurisdictional activity is being made by and on behalf of our affiliate Altenex. Altenex is registered as an Introducing Broker with the NFA and additional information on Altenex is available at <https://www.nfa.futures.org>.

Company history

\$5 Billion+
of energy
spend managed

7,500+
customer sites
and 250 solar
project sites

>\$3 Billion
in energy
projects funded

**12 of the
Fortune 50**
are
customers

2.0+
gigawatts of
offsite renewables
procurement

**Managing
500 M+ sq. ft.**
of client facilities'
energy demand



HOWARD
UNIVERSITY



WASHINGTON AND LEE
UNIVERSITY



University
at Buffalo



NYU Medical Center
NYU School of Medicine & NYU Hospitals Center



Clarkson
UNIVERSITY



WEST WARWICK
A New Vision for a New Century
Rhode Island



NORTH SMITHFIELD
Rich in history & community spirit



washington
DC



KOHL'S



EMPIRE
STATE
BUILDING

FedEx
Ground



DANA-FARBER
CANCER INSTITUTE

HERSHEY
THE HERSHEY COMPANY



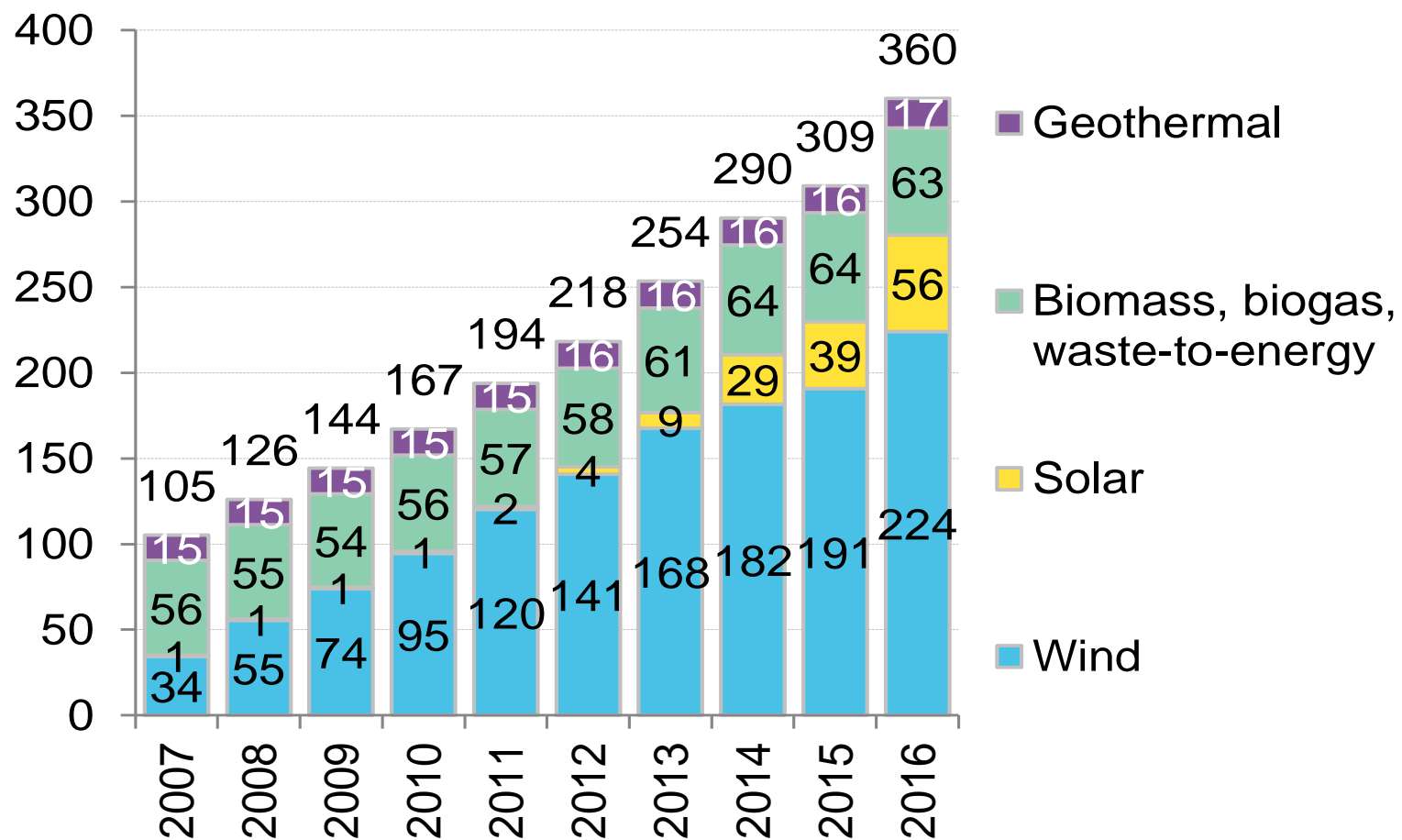
DOW JONES

Bloomberg

IRON MOUNTAIN

Walgreens

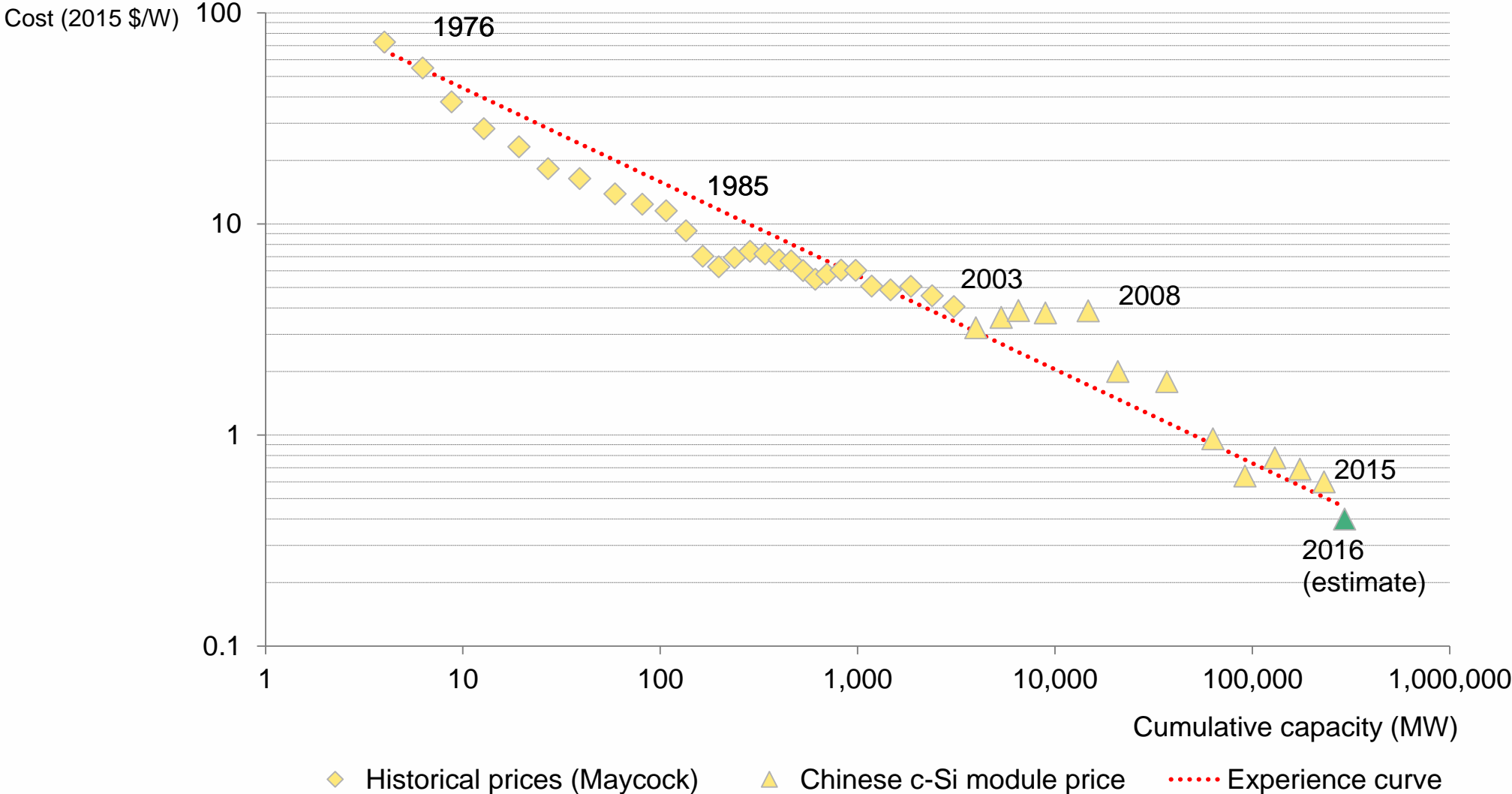
US non-hydro renewable generation by technology



Terawatt Hours

Source: Bloomberg New Energy Finance/Business Council for Sustainable Energy

The declining price of solar



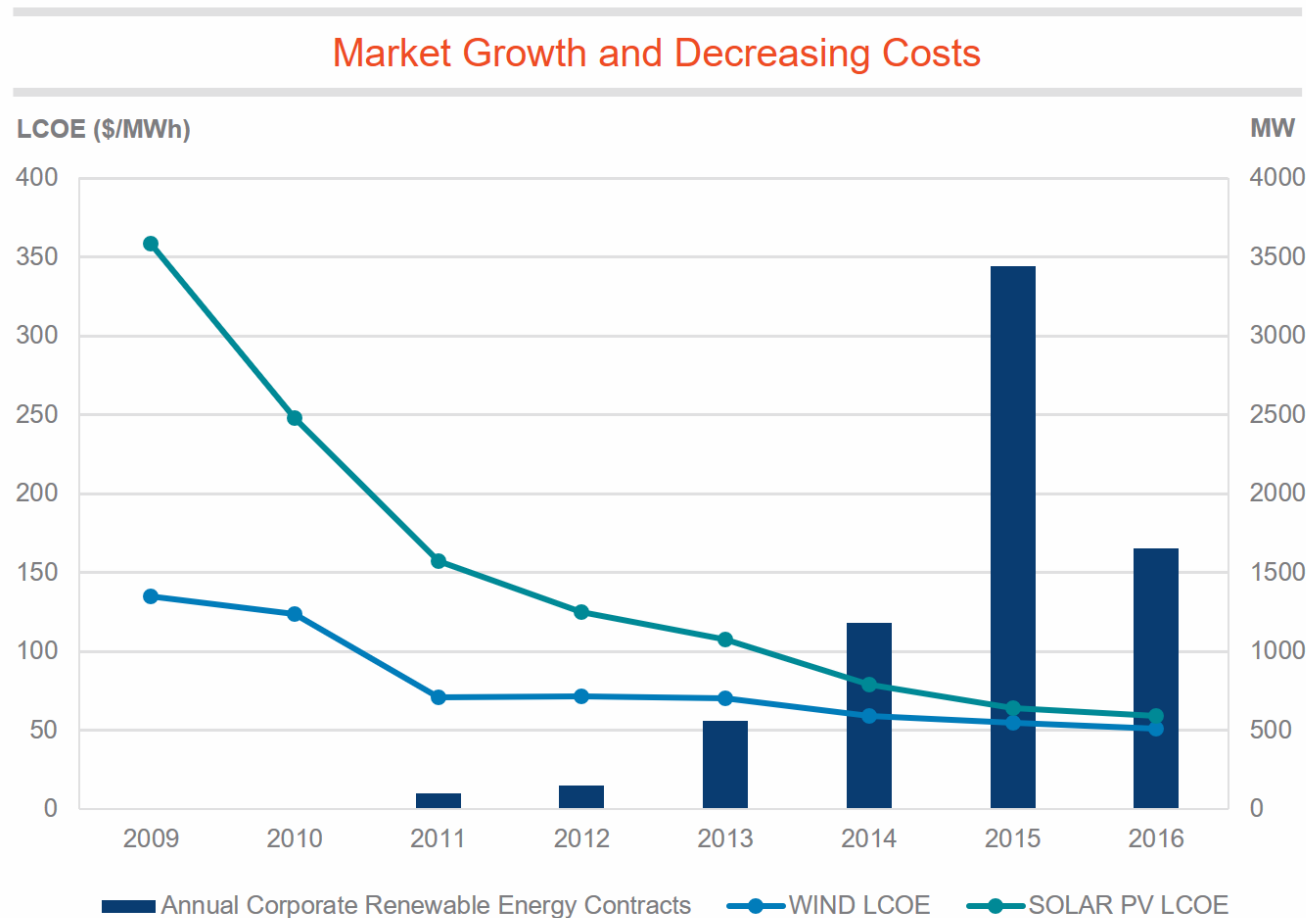
Source: Bloomberg New Energy Finance/Business Council for Sustainable Energy

Non-utility renewable energy purchases

- 63% of Fortune 100 Companies have at least one clean energy target.
- Wind and Solar PV costs have decreased approximately 60% and 80% respectively.

Drivers for Corporate Purchases:

1. Risk Management
2. Long Term Planning
3. Sustainability
4. Cost Parity
5. Brand Reputation



Data values for graph sourced from U.S. Department of Energy's National Renewable Energy Laboratory, 2015 and the Rocky Mountain Institute, 2017.

CORPORATE RENEWABLE ENERGY BUYERS' PRINCIPLES: INCREASING ACCESS TO RENEWABLE ENERGY

70 COMPANIES

54 MILLION MWH OF DEMAND FOR RENEWABLE ENERGY

\$6 TRILLION IN MARKET CAP

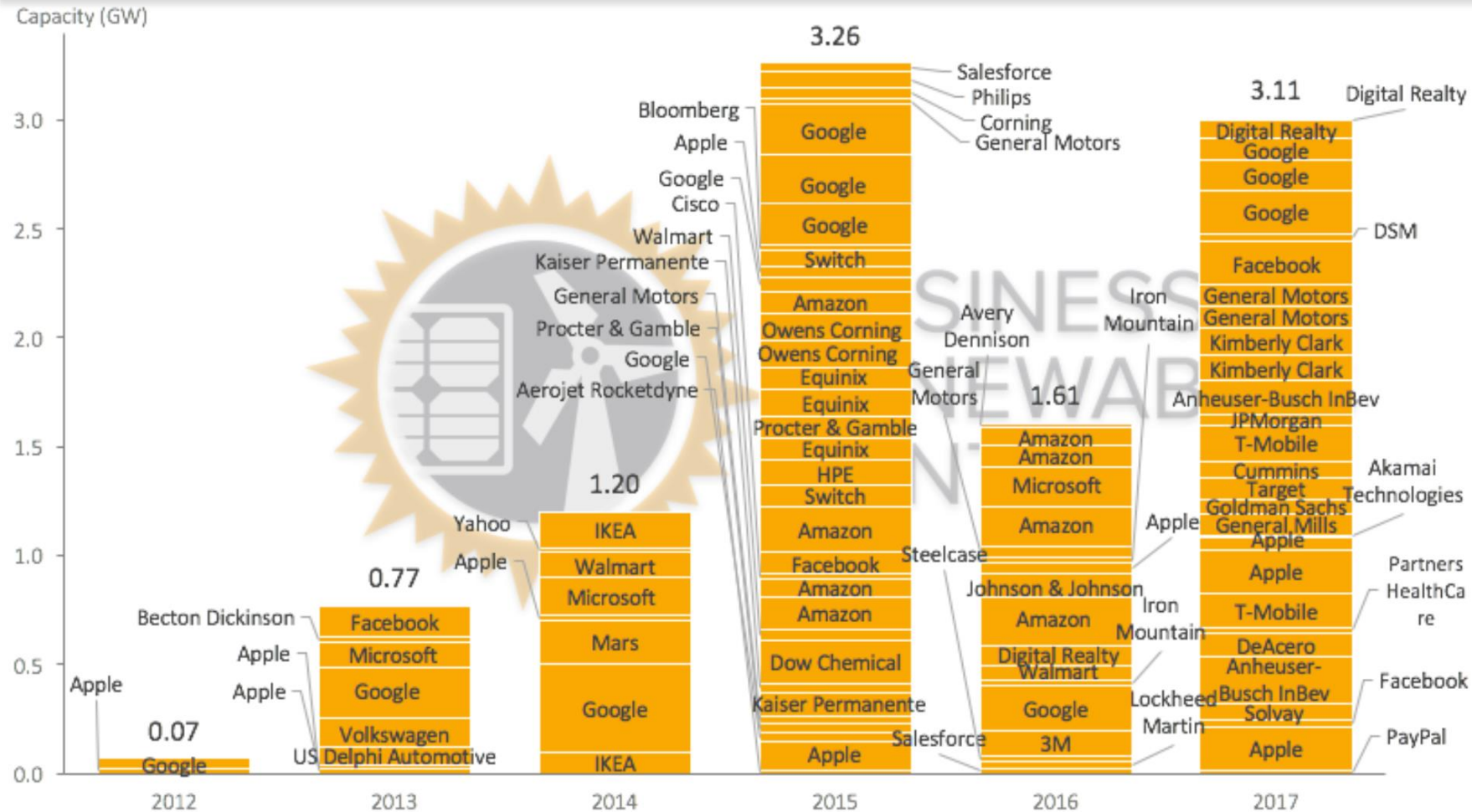


www.buyersprinciples.org

RE100



Corporate Renewable Deals 2012 – 2017



Publicly announced contracted capacity of corporate Power Purchase Agreements, Green Power Purchases, Green Tariffs, and Outright Project Ownership in the US and Mexico, 2012-2017. Excludes on-site generation (e.g., rooftop solar PV) and deals with operating plants. Last updated: January 5, 2018.

Copyright 2017 by Rocky Mountain Institute

Challenges to renewable energy adoption

Internal
Alignment

Lack of
Independent
Analysis

Market
Access

Limited
Internal
Resources

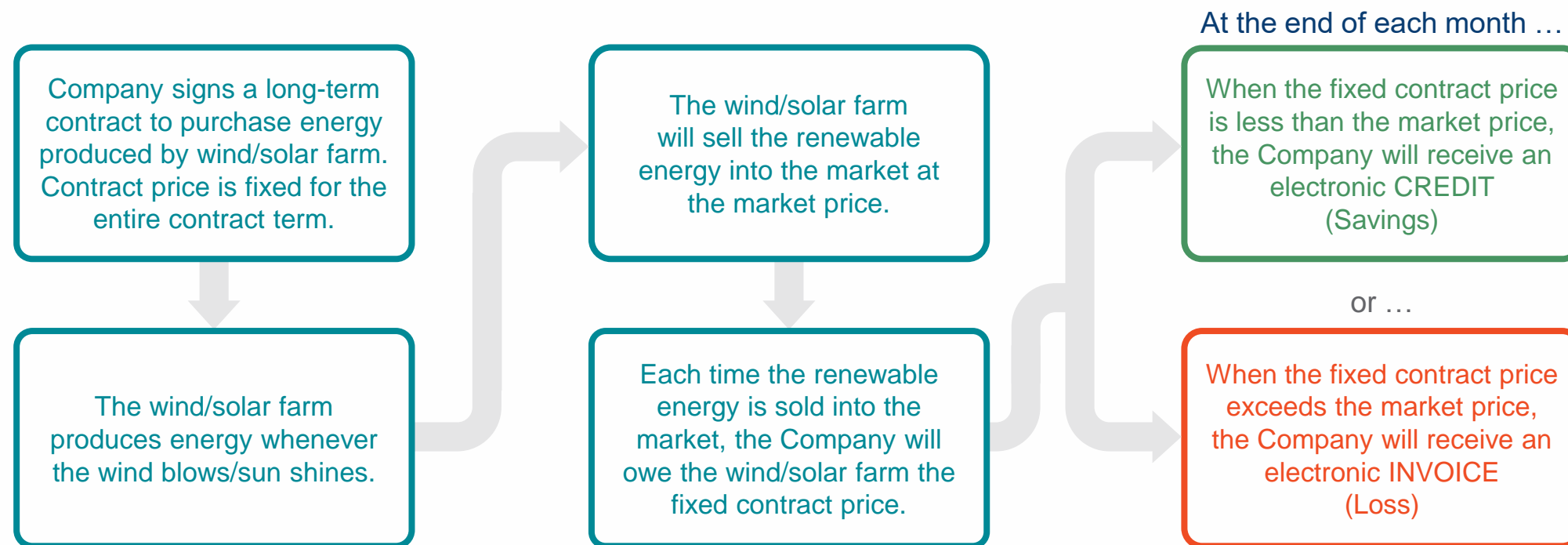
Unfamiliarity
with Contract
Structures

The Renewable Energy Purchase Agreement (REPA)



How Does the Renewable Purchase Agreement Work?

The Renewable Energy Purchase Agreement (REPA) is the most widely adopted form for corporate offsite renewable energy because of the flexibility and protections it provides.



The Company receives all of the environmental and financial benefits of the renewable energy without managing the physical power.

Our Process

Criteria and load profile

- › Collect data on current and projected load requirements
- › Profile existing renewable initiatives / lessons learned
- › Select portfolio of strategies to reduce cost and offset risk
- › Model power prices in each geography identified
- › Map decision making process and create approval workflow

Stakeholder education

- › Coordinate with finance and treasury teams on financial model and credit
- › Establish accounting treatment with internal and external accounting teams
- › Bootcamps on markets, technology, analysis, deal structure and risk profile
- › Prepare presentations for upper management

Competitive process and analysis

- › Identify matching renewable technologies / geographies
- › Model anticipated economics and risk of each project
- › Conduct competitive process targeting pre-qualified projects
- › Model deal attractiveness against customer requirements
- › Rank projects by savings opportunity, developer due diligence and unique requirements

Project selection and negotiation

- › Draft Non-binding Letter of Intent and definitive documents
- › “Negotiation Guideline” documents
- › Initiate purchase agreement
- › Manage flow of documents and advise on key commercial terms
- › Approval process workflow document

Contract management and monitoring

- › Renewable energy attributes management
- › Monthly settlement with audit
- › Record keeping consultancy
- › Ongoing client services support

Timeline and Key Stakeholders

Edison Energy works to educate relevant internal stakeholders and to develop a criteria profile prior to going to market. This helps ensure that any transaction meets the criteria brought forward and promotes the greatest probability of success in the approval process.

Identify goals & stakeholders	~ 2 weeks
Inventory review & Project selection	~ 8 weeks
Demonstrate business case	~ 4 weeks
Accounting review and treatment	~ 4 weeks
Finance & Treasury review	~ 4 weeks
Operations & Facilities buy-in	~ 2 weeks
Quantify sustainability impact	~ 2 weeks
Contract negotiation	~ 8 – 10 weeks

Internal stakeholders provide input throughout the process. We provide clients with educational materials and recommendations based on established best practices for non-utility buyers. In the end, we become an extension of the client, working integrally with all parties to produce successful transactions.

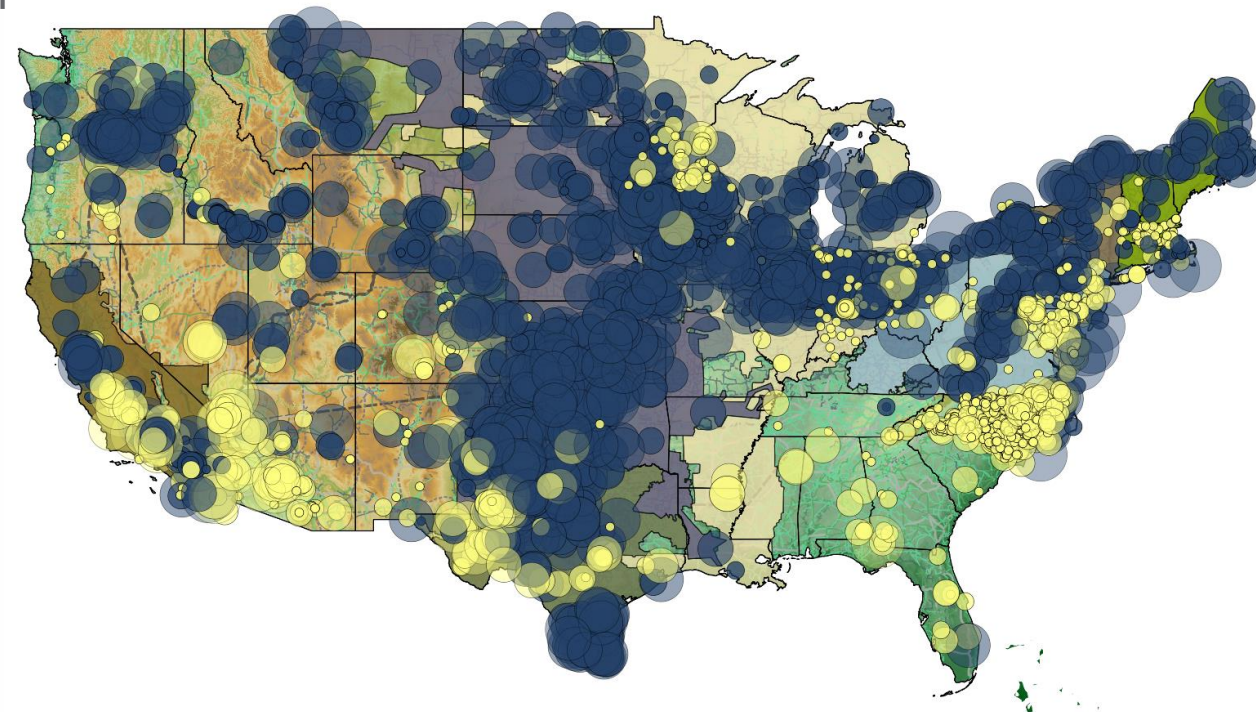
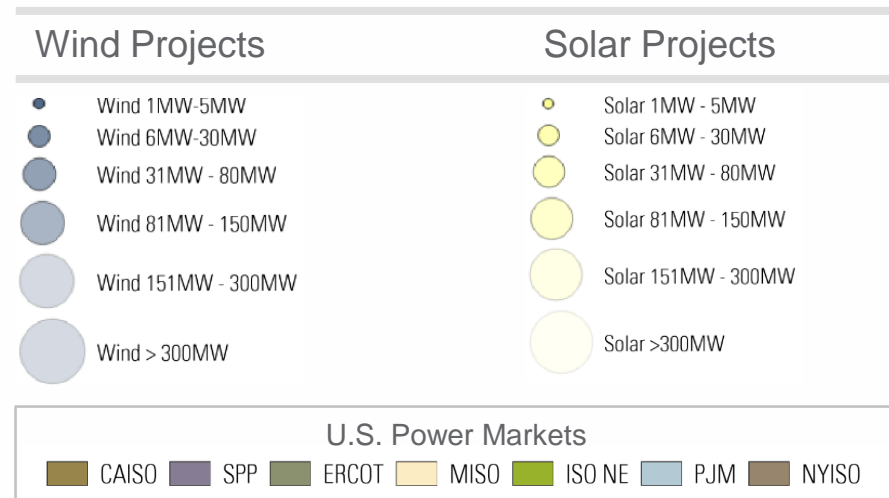


Although there is no prescriptive formula, an typical offsite renewable energy initiative can take between 8 and 10 months.

U.S. Wholesale Markets and Inventory

Historically, the market has been difficult to access and has lacked clarity. Edison Energy has developed a proprietary database, the Altenex Marketplace™ that provides detailed information and analysis on over 5,000 renewable energy projects. This data is used to help customers identify clean power purchasing opportunities that meet their selection criteria.

Edison Energy has also transacted 64 MW of deals in the regulated Mexican markets under the past self supply program.



Key Altenex Marketplace Data Model Overview

What will the market price of electricity be in the future?

- › Because the future is uncertain, we rely on a range of possible outcomes
- › The future scenarios are provided leading 3rd party data and forecast providers, Ventyx¹ (an ABB Company), SNL Energy etc.
- › The scenarios are published for average monthly prices

When will the electricity be produced? The impact of the production profile is called “Shape”

- › As prices vary throughout the day and year, it is important to know when the project is expected to generate and to have the ability to produce electricity during low wind periods (which typically correspond with high pricing).
- › Shape can be affected by location of project, turbine type and age, turbine configuration, and operation (generation during high priced hours is more valuable than generation during low priced hours)
- › Edison Energy provides shape estimates by project based on 30+ years of historical wind data

¹ The Ventyx, SNL Energy and shape input data is provided in real 2017 dollars, and does not include inflation. This allows the user to make their own assumption about what inflation will be in the future.

Others' Mistakes Made

What mistakes have been made by others in the past and how can they be avoided going forward?

MISTAKE	DESCRIPTION	SOLUTION
Location of project settlement	Settling at an illiquid and remote busbar vs. liquid hub.	Ensure hub settlement and basis risk placed on Seller.
Improper (or nonexistent) shape calculation	Understanding generation profile will contextualize the true value of the project to Company.	We take a very conservative approach to modeling shape for our clients.
Misalignment of internal stakeholders	If you do not include key decision makers early in the process, there is great risk of non-approval.	We work with our clients to educate the entire team from the outset of an engagement and have deep experience in the C Suite.
Poor understanding of contract commercial terms and structuring	Using a developer's contract or not fully understanding the key commercial terms achievable in a PPA.	Many team experts come from the development side and know where opportunities exist for the Company.
No independent analysis applied	Taking the developer's market predictions.	We perform a full and dynamic independent market analysis.
No credit posted by supplier	Operational security should be posted by the developer in case of non-delivery on the project.	Ensure this is posted at or very near contract execution. We always push for this on our clients' behalf.
Project due diligence – incomplete understanding or lack of experience	Not fully understanding the key components and trigger points necessary for a successful development.	Our supply-side team is always working on project due diligence. As previously mentioned, many of the team members were developers prior to joining Edison Energy.
Counter party / developer due diligence	Not performing full financial due diligence on a firm and not fully understanding how projects are financed.	Edison Energy has a Capital Markets team as well as other members with deep project finance experience. Also maintain strong relationships with the key financiers in the business.

To learn more...



tim.juliani@edisonenergy.com

www.edisonenergy.com

THE HOME DEPOT

EDISON energy. POWERED BY ALTENEX

CASE STUDY:
The Home Depot—
A Multi-Dimensional
Renewables Strategy

IRON MOUNTAIN

EDISON energy. POWERED BY ALTENEX

CASE STUDY:
Iron Mountain—
Scaling Renewables to
Match the Enterprise

GM

EDISON energy. POWERED BY ALTENEX

CASE STUDY:
General Motors
and the Road to 100%
Renewable Energy

altenex
An EDISON ENERGY® Company

Market Report
Spring 2017
confidential

Emily Williams • Mary Kate Francis • Charley Hildt • Alex Curlin

WHITE PAPER An Edison Energy® Insight

**Renewable Energy,
Additionality, and Impact:**
AN FAQ ON THE U.S. VOLUNTARY
RENEWABLE ENERGY MARKETS

TIMOTHY JULIANI
Director of Corporate Engagement & Sustainability
Edison Energy

EDISON energy.