We raise energy unicorns.
NGP invests in the potential of energy.

In entrepreneurs with a provocative vision to define a smarter and more renewable energy future. NGP was created to help National Grid disrupt itself; and lead company-wide innovation efforts beyond the edge of possible, to inspire and propel the IT & energy systems of tomorrow.
10 years ago Silicon Valley investment abandoned the energy sector. In November 2018, it's back. NGP becomes the utility industry’s first Silicon Valley VC & innovation firm.

By connecting startups to a single point of access to the vast global network of National Grid, NGP will realize the full potential of ideas, lifting people & nations to new levels of prosperity, and creating enduring global impact.

Now more than ever, the world needs that kind of energy. That is what we invest in.
Why we need to innovate

Unprecedented change at an unprecedented rate.

SOURCE: CB INSIGHTS (01/31/2017)
Will energy ever be disrupted?

Our future?

Current point on digital journey

Disruption has started
Heavily Disrupted
Totally Disrupted

Current impact of digitization

Healthcare and Wellness
Energy
Logistics
Manufacturing
Automotive and Mobility
Banking and Insurance
Telecom
Retail
Media

Our future?

2.3 years to $1B valuation
Currently valued at $19B

1.3 years to $1B valuation
Currently valued at $2.8B

2 years to $1B valuation
Currently valued at $2B

3 years to $1B valuation
Currently valued at $32B

2.3 years to $1B valuation
Currently valued at $3B

2 years to $1B valuation
Currently valued at $1.7B

4 years to $1B valuation
Currently valued at $1.1B

1 year to $1B valuation
Currently valued at $3.2B

2 years to $1B valuation
Currently valued at $5B

Media

Twitter

Retail

Instacart

Telecom

Slack

Banking and Insurance

Square

Automotive and Mobility

Lyft

Manufacturing

Carbon3D

Logistics

Flexport

Healthcare and Wellness

Oscar

Energy

NIO
Who will disrupt energy? Ourselves or others?

Potential disruptors started small. They are growing fast and coming from multiple directions.

Build grid

Alternative sources

Optimize the grid

Large scale renewables

Emphasize trust and security

Performance

Time

SolarCity $2.1B Residential Solar
C3 IoT $1.5B Enterprise IoT
Sunrun $1.5B Residential Solar
Lime $1.1B Electric Scooter
Geli $46M Energy Storage
ChargePoint $675M EV Charging
Sunpower $975M Small Scale Solar
Space X $25B Space Exploration
Zoox $3.2B Electric Vehicles
Tesla $55B Electric Vehicles
EVgo $120M EV Charging
Hyperloop $700M Next Gen Transport
Ring $1.2B Smart Home
Silver Spring $830M City Connectivity
Revenues are shifting in the value chain

<table>
<thead>
<tr>
<th>Performance</th>
<th>Generation &amp; wholesale</th>
<th>Transmission</th>
<th>Distribution</th>
<th>Metering</th>
<th>Retail</th>
<th>Services ‘behind the meter’</th>
<th>Distributed Generation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value shift</td>
<td>30-40%</td>
<td>15-20%</td>
<td>40-50%</td>
<td>0-10%</td>
<td>0-5%</td>
<td>0-2%</td>
<td>0-2%</td>
</tr>
<tr>
<td>Driver of shift</td>
<td>Lower plant utilization</td>
<td>Investment in lower regulated grids and DER</td>
<td>Smart meters &amp; advanced metering services</td>
<td>IT system and self-service applications</td>
<td>Smart equipment and software</td>
<td>Distributed generation equipment</td>
<td></td>
</tr>
<tr>
<td>Opportunities</td>
<td>• Energy storage • Distributed generation • Supply/demand matching • Predictive maintenance</td>
<td>• Demand Response Systems • Advanced inverters • Microgrid integration • Cybersecurity solutions • Predictive maintenance</td>
<td>• Tariff personalization • Smart analytics • Advanced controls</td>
<td>• Tariff personalization • Supply/demand matching • Grid integration</td>
<td>• Managed consumption • Tailored services • Distributed storage • Smart devices</td>
<td>• Platform to support distributed generation • Energy trading</td>
<td></td>
</tr>
</tbody>
</table>
We are helping National Grid disrupt itself

Disruption in energy will shift new value creation to new entrants & innovators.

- Grid modernization
- Digital transformation—Increase productivity
- DER evolution
- Flexible generation
- Customer-centric evolution

Lagging incumbents will slowly lose share.

Utility Sector

Performance

REGULATION UNCERTAINTY

AD-HOC INNOVATION

Inflection point

Time
In 2008, venture capital funding of energy or electricity companies stood at:

$1bn
(£700m)

In 2017, this figure was:

$4bn
(£2.8bn)

+300%

2018

“It is critical that we future proof our business. That means becoming a disruptor in our own right.”

JOHN PETTIGREW, CHIEF EXECUTIVE, NATIONAL GRID

SOURCE: PITCHBOOK (JAN/2018)
Focus on emerging technologies enabling disruption

**IoT—Industrial & Smart Assets**
- Sensors and devices are becoming cheaper and will allow connected plants and homes
- IoT will capture significant market share
- Connected infrastructure is already a reality and enables new business models

**Cloud Computing & Digital Transformation**
- Energy management software can bring new revenues
- Virtualization of networks will reduce energy consumption (e.g. SDN)
- Connectivity enables network solutions (e.g. Smart Grids)
- Virtualization of assets allows monitoring and optimization

**Big Data, Artificial Intelligence & Analytics**
- Real-time data analysis and forecasting
- Asset optimization, monitoring and inspection
- Customer engagement and personalization
- Resource allocation and real-time operation

**Cybersecurity & Asset Safety**
- Assets will be under severe risk of cyber attack
- Regulation in energy demands strong security
- Multiple nodes accessing the network will need to be secure
- Facilitated flow of information demands new security strategy

**Blockchain**
- Capabilities to register multiple complex transactions
- Handle time and geographic mismatches
- Empower consumer with transparency
- Build trust and interoperability

**Smart Cities, Smart Home & Smart Transportation**
- Autonomous driving changing how people use transportation
- Electric Vehicle can serve as energy storage units
- Cities microgrid helping balance consumption
- Demand Response Systems will play an important role in homes
Our mission.

Enhance National Grid’s strategic objectives by making and managing financially attractive investments and leading company-wide innovation efforts.
How we execute our mission.

**Investing**

Making & managing investments in complementary startup organizations

- **Corporate Venture Capital**
  Invest in expansion and growth stage startups that are ready to partner with our core and emerging businesses

- **Incubation**
  Invest in early stage companies and enhance visibility in disruptive technologies for internal engagement

**Innovation**

Connecting innovation more tightly with our growth strategy

- **Business Development**
  Accelerate growth of internal and external startups/projects through business models and monetization strategies

- **Innovation**
  Identify new areas for growth & operational improvement both internally and externally and lead innovation projects company-wide
<table>
<thead>
<tr>
<th>Innovation</th>
<th>Creating ideas, standing-up companies, prototyping and creating new businesses, support using lean startup methodology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incubation</td>
<td>Invest in early stage companies, provide support for prototyping and go-to-market, guidance for growth, access to our individual networks (Energy &amp; Silicon Valley), customer introductions, recruitment support</td>
</tr>
<tr>
<td>Corporate Venture Capital</td>
<td>Invest in expansion and growth stage companies, provide guidance in scaling the business, access to our individual networks (Energy &amp; Silicon Valley), customer introductions, recruitment support, Syndicate program with other utilities, connections to raise future rounds</td>
</tr>
<tr>
<td>Business Development</td>
<td>Accelerate growth of invested companies and internal projects by tapping into National Grid resources and business partners, access to C-suite executives of Fortune 500 and Global 200 companies, access to our advisory network (Energy &amp; Silicon Valley)</td>
</tr>
</tbody>
</table>
How we pursue our mission

CHANGING SOMETHING ESTABLISHED THROUGH INTRODUCTION OF NEW METHODS, IDEAS, OR PRODUCTS.

**Sustaining**
Examples: Digital transformation, enhance the customer experience, cost reduction, process refinement, productivity and efficiency improvements.

**Disrupting**
Examples: New technology and product development, electric vehicle, energy storage, home generation, smart home, smart cities, energy trading, peer-to-peer energy, etc.
Incremental improvements

Asset-heavy regulated utility
- Complicated regulation and government intervention
- High barrier to entry – capital, regulation and physical assets
- Focus on increasing ROA
- Using digital tools to improve customer experience
- Productivity improvements are incremental

Sustaining
Examples: Enhance the customer experience, cost reduction, process refinement, productivity and efficiency improvements, etc.

Incremental improvements are important.

Customer
- Customer support – AI Chabot
- Customer data and insights
- Custom user experiences

Reliability
- Distributed automation
- Asset health management
- Physical security
- Forecast & real-time alerts

Network & Data
- Data management systems
- Cloud infrastructure
- Network management
- Cybersecurity

Optimization
- Energy management system
- Demand response
- Digital transformation
- Process enhancement
Breakthrough improvements

Disrupting

Technology Revolution
• Increasingly inexpensive, portable and capable computing power and internet connectivity
• Cloud computing tearing down barriers to develop new Software-as-a-Service
• “No-asset” business models disrupting incumbents in every industry (e.g. Uber, AirBnB), with peer-to-peer as major trend
• Energy sector has many startups trying to disrupt how business is done today (e.g. Stem, Sunrun, Chargepoint)

Disrupting
Examples: New technology and product development, electric vehicle, energy storage, home generation, smart home, smart cities, energy trading, peer-to-peer energy, etc.

Non-exhaustive examples of disruption happening in energy

Electric Vehicle
• Responsive charging
• Vehicle connectivity
• Prosumer integration

Home Generation
• Residential solar
• Grid services
• Smarthomes

Energy Storage
• Demand response
• Load management
• Demand peak shaving

New Business Models
• Connected cities
• Peer-to-peer models
• Energy trading
Our toolkit to drive Investing & Innovation

Execution Strategy
- Delivers innovation with lean startup methodology
- Provides accountability and method to innovation projects
- Prioritizes efforts across National Grid
- Maximizes value of initiatives
- Ensures collaboration company-wide

- Centralizes information
- Aligns processes
- Coordinates actions
- Provides transparency to innovation
- Manages portfolio performance
We have started, but will do a lot more

<table>
<thead>
<tr>
<th>Sustaining</th>
<th>Disrupting</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Direct Investment</strong></td>
<td><strong>Direct Investment</strong></td>
</tr>
<tr>
<td>SiteTracker</td>
<td>Leap.</td>
</tr>
<tr>
<td>Improve productivity</td>
<td>Unlock new ways of trading energy</td>
</tr>
<tr>
<td>AutoGrid</td>
<td>Omnidian</td>
</tr>
<tr>
<td>Grid optimization</td>
<td>Provide new service—asset performance guarantee</td>
</tr>
<tr>
<td>Climacell</td>
<td>Incubate</td>
</tr>
<tr>
<td>Reduce costs in weather incidents &amp; Disaster planning</td>
<td>Empower the disruptors of the future</td>
</tr>
</tbody>
</table>

**Today**

- **Business Collaboration Agreements**
  - Integrate National Grid with other services
- **Business Commercialization**
  - Climacell
  - Revenue Share agreement
- **Spin Out/In**
  - New revenue stream—Project GRAID, robotic inspection of pipes
- **PIPE**
  - Increase involvement in new business models
- **Joint Venture**
  - Discover and access new markets
- **Spin-off**
  - Stand-up company internally and spin-off

**Tomorrow (Potential)**

- **IP Licensing**
  - Commercialize IP—Thermal rating for transmission line sag
- **Joint Customer Opportunities**
  - Cross-selling and providing customer benefits
- **Direct Investment**
  - Invest in companies that are strategic and disruptive
- **Strategic Partnership**
# How we engage with our portfolio companies

<table>
<thead>
<tr>
<th>Company</th>
<th>Overview</th>
<th>Strategic Engagement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Omnidian</td>
<td>Provider of comprehensive plans for continuous monitoring, predictive analytics, field services, and performance guarantees for distributed energy resources.</td>
<td>Alignment in Infrastructure and analytics for Distributed Energy Resources Initiatives.</td>
</tr>
<tr>
<td>AutoGrid</td>
<td>Provides software platform to orchestrate demand and supply on electric grids by managing a network of connected resources.</td>
<td>Partner in Distributed Resources Management Systems and predictive maintenance.</td>
</tr>
<tr>
<td>climacell</td>
<td>Provides hyper-local, high-accuracy weather forecasts through a passive sensor network.</td>
<td>Partnership to support in disaster planning, readiness, response and recovery, customer response, and future pricing models.</td>
</tr>
<tr>
<td>SiteTracker</td>
<td>SaaS software that manages high-volume, complex distributed infrastructure projects.</td>
<td>Distributed project deployment software solution for operations (e.g. track deployment of electricity poles.)</td>
</tr>
<tr>
<td>leap.</td>
<td>Marketplace for distributed energy resources.</td>
<td>Pathfinding company with future fit in more effective monetization of grid services.</td>
</tr>
</tbody>
</table>
Our value proposition to entrepreneurs

**Financial**
Make attractive financial return on investment

- **Connections**: Wide individual networks and business connections with partners among Fortune 500 and Global 2000 companies
- **Funding support**: Partnership with top tier investors to raise future funds
- **Advisory network**: Access to broad network of industry experts and successful founders/executives
- **Long-term commitment**: We invest out of our Balance Sheet and don’t need to fundraise
- **Growth support**: Experienced investors helping entrepreneurs to grow and exit through M&A and IPO

**Strategic**
Provide strategic benefit to National Grid

- **Access to National Grid**: Direct access to business units to work together with startups
- **Test facilities**: First substation area dedicated to testing in the World
- **Innovation Hubs**: Access to Worcester Sustainability and Rhode Island Energy hub
- **National Grid expertise**: Support from energy industry experts and business partners
- **Data**: Opportunities to partner with National Grid to harvest the power of our data
- **Syndicate program**: Partnership with other Utilities for customer engagement
Supporting companies to grow leveraging our resources

The CEO Summit brings together thought leaders to showcase technology & make connections.

Find business leaders, investors and innovators to help grow your business.

Targeted introductions between portfolio companies and decision makers to help grow your business.

An intimate gathering of NGV portfolio companies executives and National Grid leadership.

Opportunity to discuss trends, share insights and debate topics with executive decision makers.
Unique resource available: testing facilities example

Deeside (U.K.)
- 15-acre test environment for innovative substation technologies:
- Permanent off-grid power supply up to 550kV
- Overhead 400kV towers and lines
- Underground compound; gas & air insulated 400kV bays; air insulated 132kV bay
- Workshops, offices, laboratories, internal/external storage facilities
- Operational starting 2020
  - http://deeside.nationalgrid.co.uk/

Millbury (U.S.)
- Test SCADA environment connectivity for potential end-to-end control system testing
- 3-phase power system simulator for (secondary) control system testing and evaluation
- ~12 poles energized to 13.8kV circuit off the street energized at (primary) line potential
- Smart faulted circuit indicators
- S&C PME-9 automated switchgear
- Advanced switched capacitor bank
- Feeder monitor
- ABB, Cooper Nova, G&W Viper-S, G&W Viper-ST & Cooper WE/ Form6 reclosers
- Line voltage regulator
Pathfinding Example: OMNIDIAN

Provides monitoring, analysis, field service, and performance guarantees for DER's, starting with residential solar.

Engagement process

- Focus area identified through Distributed Energy roadmap
- Investment identified as Pathfinding initially
- Will become strategic partnership once deployed and system performs as expected

Strategic fit

- Platform Value
  - Use solar portfolio to build infrastructure for a grid services platform that taps into residential and & C&I
- Data Value
  - Increased accuracy of system performance, propensity to adopt solar
- Market Value
  - Diverse perspective on solar market beyond residential solar installations
  - 21kw system in NY REV for initial deployment
Strategic Example: **climacell**

Provides weather forecasting service that leverages non-traditional data to drive more detailed, more accurate weather forecasts.

**Engagement process**
- Focus area identified through Intelligent Operations investment thesis
- Investment identified as Strategic to support weather incident response
- Completed LOI in less than 1 month from investment

**Strategic fit**
- Incident response
  - National Grid can improve its customer service by having a more accurate, detailed and localized weather forecast
- Dynamic transmission line rating
  - Transmission lines depend on weather to adjust the rate in which electricity flows through it
  - Having a more accurate weather data allows better operations
- Data sharing
  - National Grid has sensors throughout the transmission lines. Accessing this data can help Climacell improve its algorithm to forecast better
- Potential IP licensing
  - National Grid could potentially license its own IP
Leadership

Lisa Lambert
Chief Technology and Innovation Officer,
Senior Vice President, National Grid Partners

Education
- MBA, Harvard Business School
- BS/MIS, Pennsylvania State University
- Certificate, Executive Education Accelerator Program, Stanford University

Career
- Software developer at Owens Corning
- VP and Managing Director at Intel Capital
- Managing Partner at The Westly Group
- Board of Directors at National Venture Capital Association
- CTO, CIO and SVP at National Grid
- Founder and Managing Partner at NGP

UPWARD
- Founder, CEO & Chairman
- Global network of executive level women to accelerate careers
- Nearly 5000 members

Highlights
- Over 20 years doing investments, incubations, commercial agreements, strategies, and innovation projects
- Led investments in 100+ companies
- Track record of 7 IPOs and 35 M&As
Leadership: robust investment & innovation expertise

Lisa Lambert
Chief Technology and Innovation Officer & SVP, National Grid Partners

Innovation
- Brian Ryan
  VP, Innovation
  Highlights:
  • Led Vectors innovation efforts that transformed the culture of a traditional electricity distribution company to be recognized internationally

Incubation
- Dillon McDonald
  VP, Incubation
  Highlights:
  • Co-founder of Jumpstart, leading the company to acquisition
  • Invested and advised companies in DG, IoT, and EV's

Corporate Venture Capital
- Pradeep Tagare
  VP, Corporate Venture Capital
  Highlights:
  • Led investments in 16 companies
  • 3 IPOs and over 8 M&A exits over 13-year career (3 unicorn ones)
  • Kauffman Fellow

Business Development
- Kareem Fahmy
  VP, Business Development
  Highlights:
  • 12 years in operating roles at Intel: sales, marketing, operations and software development
  • Led business development at Intel Capital

Venture Fellowship
  • Provide a program to enable National Grid employees to build skills in venture capital and innovation
  • Promote a culture of investigating new fields and expanding perspectives
Presence in Silicon Valley & covering the World

NGP realizes the full potential of your idea, creating enduring global impact.

New York Office
Corporate function support through marketing, public relations and finance.

Los Gatos Office
Experienced investors and business development teams working with startups in the Silicon Valley.

Boston Office
Investors, business development and innovators bridging the gap between innovation and National Grid’s core business.

London Office
Investors, business development and innovators accessing the European innovation environment.
What’s next.