COMPASS ENERGY LLC

Information

to

Request for Information (RFI)

CUYAHOGA COUNTY UTILITY & MICROGRIDS

June 30, 2022

Responses to Section 3.

Name: Compass Energy LLC

Services: Design, engineer and fabricate our proprietary equipment
Develop distributed generation projects through vertical integration

Our joint venture partner has extensive equipment and grid management experience

Recruit participants to join the in-fence/micro-grids

COMPASS Energy's system creates 'clean' power as follows:

- Elimination of open flame combustion through a controlled proprietary decomposition chamber
- Creation of a high-grade carbon co-product (in effect, sequestering carbon) suitable for use in water treatment plants
- Scalability: from a single modular unit for in-fence distributive energy, to a stacked series of units powering a micro-grid
- Elimination of hazardous monofils utilizing Compass' fuel material

Compass has spent $1.4 million to date on its proprietary system. All but one component of our system was designed, engineered, and fabricated in Northeast Ohio. We intend to continue the same.

Having developed the system locally, like local famers, we reduce the carbon footprint from production of equipment to clean energy production.

Our backup fuel is natural gas. During routine maintenance and repairs, our unit flips a switch to an alternate fuel regulator and we are back on line with production.

Initially, Compass required $75 a barrel of oil to make our alternative production profitable. Therefore, we did not produce since the recession of 2009-2010. As technologies have improved and the prospects of the long-term oil increase plateauing on a permanent level above $60 a barrel of oil, we are prepared to commence production.

MANAGEMENT

Keep the management chart flat. Independent operations dialoguing 24/7 through monitoring equipment (internally and externally with the County) with one authorized person from the County and one from each generator to discuss updates and trouble shoot any problems.

We are available to meet and discuss:

216.644.7470 compass0069@gmail.com

COMPASS
Energy Platform

June 24, 2022

To: Mike Foley
Cuyahoga County Department of Sustainability
mfoley@cuyahogacounty.us

From: Rick Bolton
Compass Energy Platform
rick.bolton@compass.energy

Re: Cuyahoga County Utility and Microgrids RFI

Dear Mike Foley,

Thank you for the opportunity to respond to the Cuyahoga County Utility and Microgrids RFI.

We are excited about your department's vision for Cuyahoga County. The Initiative proposed in your RFI is important and ambitious, and we would like to help in any way we can.

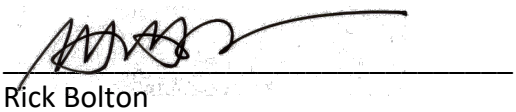
Compass Energy Platform ("Compass") is not a manufacturer or utility. We are a development and financing platform that uses power purchase agreements (PPAs) and public-private partnerships (P3) to help government agencies, municipalities, and commercial/industrial concerns prepare for the future through district-scale energy projects that increase local environmental and economic resilience.

I will be your point of contact for this RFI. You will find me at:

rick.bolton@compass.energy
mobile: +1.310.801.0076

We are pleased to present you with our response. We hope that you find our remarks relevant to your needs, and we look forward to future conversations.

Sincerely,



Rick Bolton
Chief Executive Officer
21C LLC d/b/a Compass Energy Platform

Response to Request for Information

Cuyahoga County Utilities & Microgrids

Prepared for:
Cuyahoga County Department of Sustainability

Prepared by:
21C LLC d/b/a Compass Energy Platform

Submitted on: June 24, 2022

COMPASS
Energy Platform

Notices

Restriction on Use

This Response to Request for Information was prepared by Compass Energy Platform ("Compass") for informational purposes only in response to the Cuyahoga County Utility & Microgrids RFI.

Compass makes no claim to any government data and other data obtained from public sources found in this Response (whether the owners of such data are noted in this Response). Compass does not make any express or implied warranty or representation concerning the information contained in this Response, or as to merchantability or fitness for a particular purpose or function. This Response is incomplete without reference to, and should be read solely in conjunction with, further discussion with Compass.

© 2022 Compass Energy Platform

Table of Contents

Introduction

Given our urgent need to decarbonize fuel sources, and to otherwise diminish the negative effects of climate change, it is essential that we shape every energy project to be as impactful as possible. Ultimately, distributed generation projects (including fleet charging) need to be embedded within renewable and resilient *energy districts*. Microgrids – stand alone, adjacent, or nested within one another -- are the building blocks of such districts.

Microgrids boost municipal and commercial resilience, and they also offer opportunities for economic development. The Cuyahoga County Department of Sustainability's microgrid Initiative clearly understands the benefits that can be obtained through microgrids and local distributed generation. In fact, the County is considering not only microgrids, but an entire municipal utility built upon resilience, economic opportunity, and energy equality.

Public/private partnerships (P3) and "energy as a service" power purchase agreements (PPAs) offer municipalities ways to jumpstart large-scale microgrid projects, allowing governments to turn onerous upfront capital expenditures into manageable operating expenses. The ambitious scale of the energy transition proposed by this Initiative, added to the economic imperative to attract advanced manufacturing companies to the County, makes third party financing and development imperative.

Compass Energy Platform ("Compass") is designed for the kind of Initiative described in this RFI.

Compass is a clean-energy development and financing platform that helps government agencies, municipalities, commercial/industrial concerns, and utilities prepare for the future through district-scale energy projects that increase environmental and economic resilience. We de-risk, develop and finance every sort of distributed energy asset – microgrids, solar, wind, fuel cells, battery storage, CHP, and smart city assets. Our investment model focuses on power purchase agreements (PPAs) and public-private partnerships (P3s).

Large scale projects require the coordination of multiple companies and skills – project assessment, engineering, procurement, construction, operation, and maintenance. As a development *platform*, Compass has relationships with a variety of best-of-breed implementation partners at every step in the development chain, and we bring these partners into our projects during the earliest stages of development.

Our perspective and qualifications are detailed in the proposal below.

Minimum Requested Information

Name, Services, Experience

Name
21C LLC d/b/a Compass Energy Platform

Services
Project financing, development, ownership, construction, operation, maintenance.

Experience
See "Additional Qualifications" below.

Roles

Developer of Utility Customers, Distributed Generation Projects, and/or Microgrids

Compass is a full-service platform. We design, finance, build, own, operate, and maintain microgrid and distributed generation projects. This is sometimes referred to as the DFBOOM approach.

- We meet with multiple potential offtake customers (commercial, municipal, educational, medical, and so on) to understand their energy needs. As part of our audits, we analyze existing load data, customer bills, and engineering drawings.
- We create a viable commercial model that allows us to offer resilient and renewable energy (and additional energy services) to potential customers at competitive rates.
- We develop all necessary contracts, including "energy as a service" PPAs.
- We obtain equity, debt, and tax equity funding for each project.
- We design, build, own, operate, maintain, and guarantee these projects.

Design and Construction Team (Engineering, Procurement, Construction) of Distribution Infrastructure, Distributed Generation, and/or Microgrids

Compass has partnerships with a variety of engineering, EPC, technology, operation, and maintenance firms. Taking a platform approach, we create projects teams tailored to the specific requirements of each project, with Compass serving as the lead.

Our development relationships include (among others):

- Capital: Plenary Group, Scale Microgrid Systems, Generate Capital, NextEra
- Engineering: Arup Engineering, Burns Engineering, CHA Engineering

- Urban planning: WXY Studio
- EPC/OM: Mortenson, Jingoli DCO, NextEra
- Technology: Bloom Energy, Enchanted Rock, Siemens, Cat, Power Secure

Utility Management

Our platform structure and development process allow us to define and execute on opportunities at utility scale. Many of our partners listed above have experience at that scale.

Challenges or Barriers

In our experience, the most significant challenges reside around procurement. Because we work at our own risk as a developer (assuming all upfront costs), a clear procurement path is important to us. Typically, procurement happens in stages (for example, an MOU leading to an LOI leading to a PPA), but in each case, we work with our customers to understand the procurement pathway and map out development stages that synchronize with that pathway.

Timeline

It is, of course, hard to define a project without sufficient information. There are many details that can create significant project delay if they are not properly understood. (For example: How long does the utility/grid interconnection process take? How about environmental permits? Is the land on which the project will sit zoned properly? If not, how long will a zoning revision take? Are there supply chain issues with any equipment? And so on.)

Here is a typical timeline for one of our microgrid projects. Please see the "Timeline" section below for more details.

2022	2023	2024 - 2025	2026
Project Definition	Engineering	Construction	Commercial Operation
Typically, a 6-to-8 month phase is required to finalize scope, commercial model, and initial engineering design. Given the complexity of the Initiative, this stage could be longer.	Next, a 12-to-16 month phase is needed to complete engineering; negotiate PPAs, contracts for construction, operation and maintenance; and finalize project financing.	Once project details are completed, construction can begin. Based on project scope, this phase usually takes 24 months.	Based on this timeline, commercial operation will commence in early 2026.

Meeting

We love the give and take of project planning, and we believe we can provide a great deal of value even at the earliest stages. We would be happy to meet with the County and others to present ideas and to answer questions.

Vision

The Need for Resilience

Resilience drives the microgrid boom, and resilience tends to be local. Locality seldom means isolation, however, so much as difference. Of course, resilience is a property of people and places. It is necessary and good that one place adapts differently than another. Locality provides a better scale for participation. Having an everyday stake helps long-term adaptation. Having many resilient locales soon makes for a more adaptable aggregate."

- Malcolm McCullough, *Downtime on the Microgrid* (2020)

The *Wall Street Journal* recently noted that "in the past two years, the U.S. has experienced the highest annual tallies of billion-dollar weather disasters since 1980 — when the National Oceanic and Atmospheric Administration began compiling such records — with 22 in 2020 and 20 in 2021." (*WSJ*, 01/24/22)

Like other communities in the United States, Cuyahoga County is impacted by escalating inclement weather caused by climate change. Thunderstorms, tornados, large hail, and high winds often bring property damage and electrical outages – and this is just in the summer! Certainly, an improved localized energy distribution and generation system will bring welcome resilience.

As if that isn't enough, the electric grid is increasingly at risk from cyber hacking by foreign governments. And the Department of Homeland Security recently issued a warning about domestic terrorism, too. This, from a recent alert: "Domestic violent extremists have developed credible, specific plans to attack electricity infrastructure… identifying the electric grid as a particularly attractive target given its interdependency with other infrastructure sectors." (*The Daily Beast*, 1/25/22)

Even without all this drama, there is the fundamental problem of aging utility infrastructure. Many parts of the electric grid are simply failing, due to lack of investment and maintenance.

Economic Development and the Path Forward

But there is an upbeat story here, too. Microgrids allow for the creation of locally generated renewable energy – from solar, wind, hydro, geothermal – that helps ameliorate climate change. And microgrids allow for the creation and management of consistent clean power sought by advanced industrial firms like data centers, microchip manufacturers, and other high-tech businesses.

Cuyahoga County understands that the best path forward – for resilience and for economic development – is to build its own energy future. Because of the County's unique position as a Charter County, it can legally create a "County Utility" that will operate like a municipal utility. This gives the County the opportunity to speed the adoption of microgrids and other grid edge technologies currently blocked by regulators. (In our work in New Jersey, we have utilized features of state redevelopment law to similar ends.)

The County's vision is broad, with the aim of supporting a variety of enterprises (including transportation) while building a cross-institutional coalition. However, understanding the complexity of this undertaking, the County plans to move ahead with a strategic and phased approach, focusing first on the communities of Brooklyn and Euclid and expanding from there. And, to move things along more effectively, the County plans to fund this work through public / private partnerships.

The Compass approach is designed with these exact ambitions in mind. Our work is focused primarily on municipalities – we help cities and counties build resilience and economic opportunity through the development of advanced energy districts. Government work is not for everyone, but it remains the best way to impact everyday lives, and we enjoy it.

Our platform – which includes project financing and de-risking – offers early-stage expertise to government entities as they work out their plans, along with full development, ownership, and operation capabilities once those plans have been defined. Given the importance of upfront planning to any long-term infrastructure project, we have used this RFI to emphasize our capabilities in that area.

Business Economic Models

Using Energy-as-a-Service to Expand Local Impacts

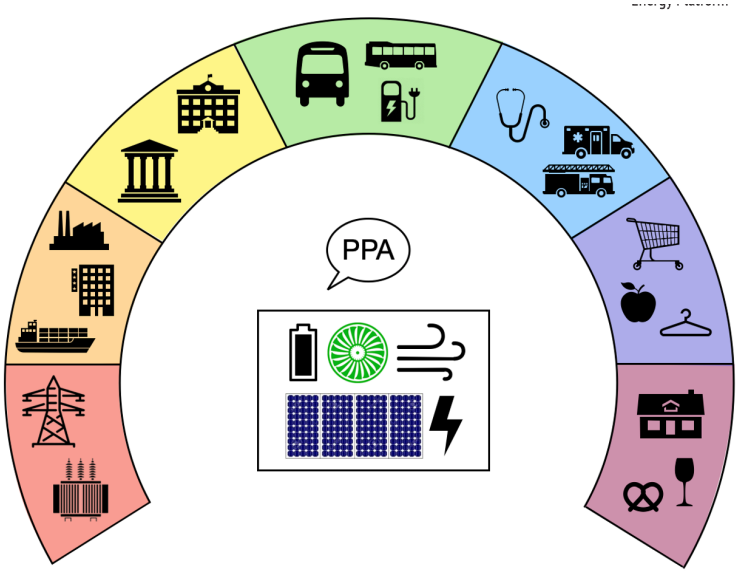
"Resilience drives the microgrid boom, and resilience tends to be local. Locality seldom means isolation, however, so much as difference. Of course, resilience is a property of people and places. It is necessary and good that one place adapts differently than another. Locality provides a better scale for participation. Having an everyday stake helps long-term adaptation. Having many resilient locales soon makes for a more adaptable aggregate."

- Malcolm McCullough, *Downtime on the Microgrid* (2020)

Given our urgent need to decarbonize fuel sources, and to otherwise diminish the negative effects of climate change, it is essential that we shape every energy project to be as impactful as possible through integration of individual assets into resilient energy districts. Microgrids – stand alone, adjacent, or nested within one another -- are the building blocks of such districts.

Unlike the far-flung historical distribution grid, these microgrid-based energy districts with on-site generation offer dedicated means to focus on the needs of local off-takers: charging depots, warehouses, offices, wharfs. Sometimes, well-financed single off-take customers have the means to pay for such resilient and renewable local energy service. But typically, this is not the case. And so, along with technical innovation, there must be innovation within the project commercial model itself, so that resilient energy service can be affordable and accessible to all.

The Compass approach is designed to deliver broad local impact through a focus on the technical and commercial innovation.



Multi-Offtake Energy Districts

It is important to understand that the services provided within such an energy district are by no means limited to emergencies.

During blue sky operation, a microgrid-based energy district remains a reliable source of electricity. This electricity can be used in many ways: baseload service, peak shaving (using cheaper locally produced electricity at moments when the cost of utility supply is high), demand response (matching local usage to available supply), load shifting (altering energy usage patterns), and frequency regulation (improving local power quality). The microgrid also can support additional services such as heating, cooling, and EV/fleet charging. During blue sky, excess electricity can also be sent by the microgrid back to the main grid, either to be sold to the utility or the open market, or net metered to reduce utility bills.

The value of the microgrid during dark sky emergencies is straightforward. By disconnecting from the main grid, the microgrid turns into a resilient island, continuing to generate and distribute electricity locally.

Fleet Charging

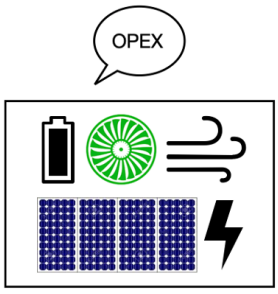
Transportation is thought to offer a “quick win” in the war against carbon. As a result, transit and port authorities have been charged with electrifying their fleets as quickly as possible. With speed in mind, business as usual for a transit authority often means creating a charging station that is connected to and powered by the local utility. The transit authority purchases the charging apparatus outright or obtains charging infrastructure from a bus manufacturer or a third-party that provides “charging as a service.”

This approach typically does not take advantage of new energy technologies like microgrids and distributed generation, denying the transit and port authorities an opportunity to assume a new and visionary role as a source of renewable, resilient transportation. This approach also does not provide a solution for the very real issues that will emerge further down the road, once fleet electrification is fully advanced. What happens in a weather emergency when the grid goes down and the electric bus fleet need to be recharged? (On-site diesel generators, while not environmentally friendly, may offer an emergency stopgap, but only if fuel deliveries are sustained. Often, deliveries cease during storms and floods.)

To meet this future challenge fully, transit and port authorities must shift to a resilient charging paradigm that uses microgrids, on-site generation, and energy storage.

Standard Fleet Charging

- Single stakeholder
- Capital burden
- Single revenue source
- Modest environmental impact
- Blue sky operation only
- Utility dependent
- "Energy as a service" option



Resilient Charging

- Microgrid focused
- Multiple stakeholders
- Operating expense
- Multiple revenue streams
- Significant environmental impact
- Emergency & Blue Sky operation
- Utility independent
- "Resilience as a service"

In our approach, the electrified fleet charging facility is transformed into the cornerstone of a larger resilient energy district. This district can serve multiple off-take customers and provide multiple revenue streams. It can also support additional emerging forms of both blue sky and emergency resilience, such as Vehicle-to-Grid (V2G) and Vehicle-to-Building (V2B) capabilities. Vehicle-to-Grid connections allow utilities to aggregate dispatch from connected bus batteries to bolster grid resilience. Vehicle-to-Building interaction turns electric buses into mobile batteries that can power key government and community infrastructure during emergencies.

Maximizing Potential

A project of this scale is a unique opportunity to build resilience, create efficiencies and cost savings, harness economic development, reduce carbon, foster a healthy environment, and, of course, fight climate change. That is a lot of ground to cover. Plopping down a giant generating plant is not the right approach. Instead, a thorough and collaborative *design process* is essential, one that considers all aspects and arrives at a customized *local solution* that is both responsive to immediate needs and flexible enough for the future.

The need for a local solution cannot be emphasized enough. In the previous century, a uniform electric grid was the norm, and for decades, this was a blessing. But new generation technology – solar, wind, turbines, and energy storage – and new distribution technology (namely, microgrids) allow energy systems to be tailor made for the unique conditions of each community and business environment, allowing for greater independence and resilience. The energy systems of the 21st century will be *local*.

Optimizing the energy infrastructure is central to the design process, and key to maximizing project potential. This optimization takes many forms.

First, the operating load – the daily consumption of electricity – must be reduced as much as possible. This means incorporating efficiency measures into all instances of energy use, including the use of smart building technologies that regulate lighting, heating, and cooling. To this end, we include efficiency partners such as Trane and Johnson Controls early in our process to optimize consumption.

Secondly, once the operating load has been defined, we turn our attention to the optimization of our project design. We study the predicted overall load profile for the project to make certain that we can meet all power requirements in an efficient and effective way. This leads us to the selection of the most appropriate generation configuration and the best microgrid control software.

The third step of optimization looks outward to the ways in which the project can support the utility distribution and transmission grids. To sell electricity back to these grids, and to provide any other grid support (such as frequency regulation), the right transaction and dispatch software must be put in place. Customization of this market-facing software is typically required.

Our Approach

Early-Stage Development Commitment

Maximizing the potential of local microgrid projects takes time and commitment, particularly in early stages in which the full scope of the project is still being defined.

Microgrids and distributed energy generation point the way to the future, but such projects are complicated. As projects grow larger – which they must, if communities are to gain meaningful resilience – they exceed the capacity and budgets of real estate developers, businesses, and government agencies. The greatest hurdle is in the earliest of stages, when the full potential of a project must be defined, and an investment-friendly commercial model must be created.

To overcome this hurdle, Compass engages with project counterparties at the earliest possible stage, usually before there is a clear definition of the project. Through a process that includes extensive collaboration, we arrive at a financeable commercial model that maximizes opportunity and impact. And, since standard procurement is still unaccustomed to multi-asset microgrid projects, our early-stage engagement gives Compass and our project partners a chance to define a viable procurement approach. Typically, we end up working in phases, with Compass taking on early-stage project definition and subsequent development stages at our own risk, under breakage agreements negotiated with our project counterparty.

Our early-stage commitment stems from our business model. We are not only an energy developer, but an energy financing partner, making Compass, at the end of the day, a third-party owner and operator. We bring private equity investment to the table and use these funds to qualify projects, shepherding them through their early stages and on through the project lifecycle. Compass develops, finances, builds, owns, operates, and maintains each of our energy projects. (This comprehensive offering is sometimes referred to using the unwieldy acronym DFBOOM.) The DFBOOM "off-balance sheet" approach requires no cash investment from our counterparties. Rather than footing the bill for expensive new energy infrastructure, our counterparties instead receive "energy as a service" from Compass through standard power-purchase-agreements ("PPAs"). This approach transforms would-be capital costs into operating expenses for our customers, removing significant risk.

Compass as a Platform

To better customize our design process, and to otherwise remain agile in a fast-moving industry, Compass is designed to operate as a platform. We assemble project design teams who join our early-stage development work, allowing us to hear from the best and the brightest as we shape our projects. (As mentioned above, Compass bears the cost of these teams.)

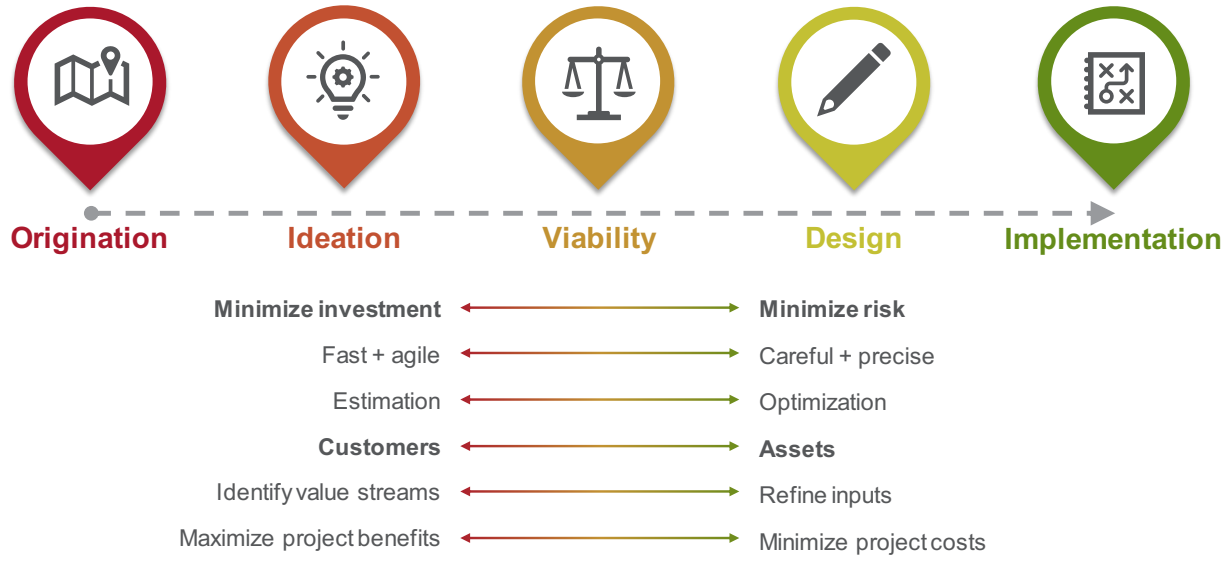
In these early stages, Compass is typically joined by an engineering firm. As development progresses, Compass brings each necessary player onto the teaming platform, contracting with and guaranteeing the work of appropriate project construction (EPC), operation, and maintenance firms. Our platform approach is essential. Compass does not function solely as a supplier, vendor, or contractor, but as the project developer. We hire and oversee our team, and we are accountable for the success of all our project contributors.

Finally, Compass is connected to a variety of private equity firms, allowing us to determine the most appropriate source of capital for each project. Before choosing a financing partner for a given project, Compass needs to understand the range of project opportunities and requirements, since the project will be a better fit for some funders over others.

Please see our partner list above under "Minimum Requested Information."

Our Process

From a high level, our process is designed to sort through potential value streams and project benefits quickly and with agility, with an initial focus on customers and their needs. Over time, as the illustration below indicates, we then shift our focus to project design and actual assets, with these later-stage decisions informed by our early-stage investigation.



"Owner's Rep" Positioning

Along with serving as the project developer, Compass is serves as an "owner's rep" for the project counterparty, managing all project subcontractors and making sure that expected results are achieved. To this end, Compass works closely with our customer to ensure the suitability of our subcontractor choices – not only the engineering and construction platform partners chosen for the project, but also the operation and maintenance firms that will be responsible for running the project once it is completed.

Agreements

Through our project agreements, we aim to de-risk the project completely for our customer. Our final agreement with our project counterparty is a single power purchase agreement (PPA), typically of 20-year duration that defines a volumetric charge for electricity (priced per kWh) and a fixed fee charge for resilience, along with all required guarantees.

As part of this de-risking, Compass typically funds the entire cost of a project, including the cost of the early-stage definition phase. During project development, we ask our project counterparties for a development contract that includes standard breakage terms. In such an agreement, our counterparty agrees to reimburse Compass for the budgeted amount, plus a modest surcharge, should the project later fail to move ahead due to counterparty decisions or conditions. (If this does occur, all intellectual property related to the project generated by Compass, including engineering, is transferred to our counterparty.) If the project for some reason does not proceed because of a Compass decision, no reimbursement is required. Of course, if the project moves ahead (which everyone wants!), Compass continues to fund each subsequent phases of the project.

Importance of Commercial Viability

Because we take on all development costs, we must be certain of a project's commercial viability before we can finalize our commitment. We begin by creating a commercial model for the project.

All too often, early-stage project feasibility studies focus on engineering design. This might have made sense years ago, when microgrid and distributed generation technologies were still in their infancy. But the failure of early government programs like NYSERDA's "New York Prize" and MassCEC's "Community Microgrids Program" can be attributed to the lack of commercial viability requirements in the studies funded by those programs.

Compass starts by defining the project's commercial model (how it will generate revenue) and its business model (how it will operate). These models must be in harmony with the economic, environmental, and social requirements for the project. We define (rather than presume) a particular engineering solution. We focus on desired *outcomes*, both present and future. As discussed above, we do this work in collaboration with our implementation partners. Once we have fully defined a financially viable project, we then finalize the engineering design that will satisfy the desired commercial requirements.

To arrive at a healthy project, Compass works to develop multiple revenue streams. This not only increases project impact, but also allows project costs to be spread more widely. We seek to expand a project's footprint to include additional off-take customers, such as nearby government, commercial, medical, and educational entities. We design grid services that can be

provided to the local utility, including energy, capacity, and frequency regulation support. The development schedule itself might itself play a role, wherein a project might be built in stages, solving immediate needs while allowing future loads and revenue streams to emerge. Such scaling will be particularly important here, given the utility scale ambitions of the Initiative.

Some aspects of our commercial models are straightforward (e.g., determining the price point for a kWh of electricity), but others are very context specific. This is particularly true of the value of resilience. What costs were incurred in previous power outages? How will these costs be avoided in the future? What value can be attached to the healthier communities and economic development that result from the project? What is the reduced carbon footprint worth? Compass works closely with our project counterparties to translate such elusive factors into a clear value proposition.

As we define project viability, we examine the three separate "stacks" that inform our commercial model:

Benefit stack: What sort of efficiencies will be fostered by this project? Will it reduce energy costs? How will it support the modernization of the electric grid? How will it create a more resilient community and economy? How will it stimulate economic development? How will the project combat climate change? How will these benefits be measured, and how will they be guaranteed by the project operator?

Revenue stack: What are the key services that this "energy as a service" project will provide, both to off-takers and to the utility? What should these services cost? Who will pay, and how much are they willing to pay? Can these benefits be extended to multiple off-takers?

Financing stack: How much equity, debt, and tax equity are needed? Which investors are most aligned to the project vision? What kind of return will the project offer to investors? What tax incentives or other benefits can be recognized? What about renewable energy credits? Are there grants available that might support the project?

Community Benefit Commitment

Alongside these project stacks, Compass places great importance on the community in which the project will live. The local nature of microgrid development requires Compass to think like a local business owner. This means, first, that our platform project team will inevitably include members of the local community: elected officials, community activists, and affected residents. This provides us with a sure way to understand and address energy inequality and the quality of life within the community.

But conversation is not enough. Alongside our energy-as-a-service PPAs, Compass develops a community benefit agreement for every project that provides tangible and measurable outcomes, over and above those provided through the project itself. The exact benefits are defined in collaboration with the community.

Types of Projects

To summarize: the Compass approach includes in-depth early-stage stakeholder engagement (understanding all interests affected by the project), thorough opportunity capture (designing a project with the broadest impacts in mind), full de-risking (taking on early-stage complexity and guaranteeing outcomes), and future proofing (creating a flexible design that can address follow-on needs and stages). In doing all this, we transform complex capital investments into straightforward operating expenses.

Using this approach, Compass can finance and develop a wide range of energy assets, typically within a microgrid format. Within our various projects, Compass is developing solar generation, gas turbine generation, battery storage, substations, and fleet charging infrastructure. Additional assets within our mandate include wind power, fuel cells (of all types), hydro power, virtual power plants, biomass, and thermal technologies.

Based on specific project needs, Compass can also finance electric vehicles themselves (of all types, including drayage vehicles), and some related non-energy costs (e.g., rebuilding a roof to support solar generation).

In other words, Compass can access a variety of funding channels, allowing us to be both flexible and creative when it comes to asset development and investment.

Timelines

Initially, Compass works to create a detailed definition of the project. During this phase, which is typically 6 to 8 months in length, Compass works with all parties to produce an investment-grade commercial model and a conceptual engineering design for the proposed project. At the end of this period, upon approval of the model and design, Compass moves into subsequent development phases, including detailed engineering.

Typical Project Timeline

2022	2023	2024 - 2025	2026
Project Definition	Engineering	Construction	Commercial Operation
Typically, a 6-to-8 month phase is required to finalize scope, commercial model, and initial engineering design. Given the complexity of the Initiative, this stage could be longer.	Next, a 12-to-16 month phase is needed to complete engineering; negotiate PPAs, contracts for construction, operation and maintenance; and finalize project financing.	Once project details are completed, construction can begin. Based on project scope, this phase usually takes 24 months.	Based on this timeline, commercial operation will commence in early 2026.

Project Definition Phase Deliverables

The chart below provides details on the typical content and deliverables created during the initial Project Definition phase. During this period, Compass shapes a clear and financeable plan for the development of all required energy assets, with a particular focus on how these assets will support both near-term and future needs of the County and its offtakers.

Work will focus on four key aspects of the project: the actual engineering design, offtaker needs and energy pricing for off-takers, land use and rights-of-way, and all financing details (including equity, debt, and tax equity options; CAPEX and OPEX estimates and the commercial/financial model).

Given the complexity and ambition of the Initiative, it is likely that there will be multiple overlapping projects rather than a single effort.

	Design	Offtake	Land	Financing
Month 1 - 2	Legal review Permits defined Operator options Utility perspective	Offtaker due diligence (needs and costs to compare)	Land audit Land lease / purchase plan	Equity options Debt options Tax equity options
Month 3 - 4	Engineering start Operator selection Interconnection details	Offtaker LOIs	Draft land agreements	CAPEX / OPEX estimates Initial commercial / financial model
Month 5 - 6	Mid-term engineering report EPC options	Draft offtaker PPAs	ROW definition	Equity, debt, tax equity confirmation of terms
Month 7 - 8	Final engineering report Interconnection application EPC selection NTP finalized	Final PPAs	Final land agreements	Final CAPEX / OPEX estimates Final financing agreements

Technology

As you might guess from our approach, we need to review a certain amount of information before we can estimate costs or procure technology. During our Project Definition analysis, we work with our engineering and technology partners to define the best technical solution.

Key to our analysis during the Project Definition stage:

- Resilience needs: Are there frequent outages and power quality issues presently? What critical electrical load needs to be guaranteed during an emergency?
- Renewability: Is renewable energy required by the offtakers? If so, what sort of real estate is available for solar, battery storage, wind generation?
- Baseload: How much electricity needs to be provided during regular blue-sky operation? Is the typical load stable (in which case, fuel cells might be indicated)? Or does it ramp up and down (In which case, natural gas gensets might be indicated)?
- Power quality: What power quality is needed by the existing offtakers? Is there a requirement for very high-power quality that will attract certain industries?
- Market: Will the project need to develop additional revenue streams? If so, which energy services can be provided to the larger grid? (e.g., direct energy sales, frequency regulation, community solar.)
- Security: What are the specific security needs for each offtaker?
- Stages: Will the project be developed in stages? How will the load grow over time? If so, what is the most efficient way to build each stage?

Scope Assumptions

It is likely that the Initiative will require the development of the following assets:

Renewable generation

Solar: Roof mount, ground mount, and parking canopy solar panels.
Fuel cells: Natural gas is most likely, but hydrogen-based fuel cells will be explored.
Gensets: Natural gas gensets will be fitted for conversion to renewable natural gas (RNG) as it becomes available.

Combined heat and power (CHP)

Given the scale of the Initiative, it is likely that CHP generation will be a part of the asset base.

Energy storage

A battery energy storage system (BESS) (likely of significant scale) will play a key role in managing energy supply.

Microgrid Controller
Control software will manage energy sources and loads during blue sky and manage disconnected grid operation during black sky events. The controller will also allow the microgrid to participate in external energy markets.

Operating Capabilities

As part of its initial assessment, Compass will also assess the various potential energy services made possible by microgrids and distributed generation.

Blue sky (everyday) operation:
- Baseload service
- Peak shaving
- Demand response
- Load shifting
- Frequency regulation
- Market arbitrage
- Net metering

Dark sky (resilient) operation
- Sustained operation of predefined critical load during emergencies.

Microgrid design options
- Single microgrid, or multiple smaller microgrids bundled as a virtual power plant (VPP).

Security protection
- Cyber hacking
- Domestic terrorism

Additional services
- CHP heating and cooling.
- Vehicle charging for citizens, customers, employees.
- Fleet charging facilities for commercial and/or transit fleets.
- Vehicle-to-building: Use of electric vehicles as portable batteries during emergencies.

Diversity, Equity, Inclusion

Compass is committed to diversity, equity, and inclusion, and will work with the County to meet all requirements and expectations, both within our own practice and within the practice of our platform partners.

Additional Qualifications

Compass Background

Compass Energy Platform ("Compass") was incubated within Navigant Consulting (now Guidehouse) and was initially incorporated as "Compass Energy Platform, LLC." In 2020, the company was "spun out" from Navigant/Guidehouse and was reincorporated as "21C LLC d/b/a Compass Energy Platform."

Compass is a clean-energy development and financing platform that helps government agencies, municipalities, commercial/industrial concerns, and utilities prepare for the future through district-scale energy projects that increase environmental and economic resilience. We de-risk, develop and finance every sort of distributed energy asset – microgrids, solar, wind, fuel cells, battery storage, CHP, and smart city assets. Our investment model focuses on power purchase agreements (PPAs) and public-private partnerships (P3s).

Large scale projects require the coordination of multiple companies and skills – project assessment, engineering, procurement, construction, operation, and maintenance. As a development platform, Compass has working relationships with a variety of best-of-breed implementation partners, allowing us to bring these partners into projects in the earliest stages of development.

Our current engineering partners include Arup, Burns, and CHA. Compass also works closely with Greener by Design (a New Jersey-based strategic advisory service).

Related Projects

Compass has several current projects directly relevant to the scope of this RFI. These projects are summarized below. Compass will be happy to provide additional details of these projects – and other work in progress – upon request.

New Jersey Transit Bus Fleet Resilience

Working under an MOU with New Jersey Transit, Compass is developing a plan for resilient charging for the soon-to-be electrified Newton Ave. Bus Depot in Camden, NJ. The Depot is the first of many that will be electrified by New Jersey Transit as it evolves its municipal bus fleets to 100% electric. The project includes the financing, development, construction, operation, and maintenance of on-site generation that will fuel a resilient microgrid. Alongside New Jersey Transit, the project will include additional municipal off-take customers to increase community resilience. The project is being financed by infrastructure investor Plenary Group.

UPS / Hudson County Microgrid

Part of the New Jersey Board of Public Utilities' "Town Center Microgrid" program, this project will provide resilience for critical municipal structures including Secaucus Town Hall and Police Station, Secaucus Housing Authority, and Alaris Health at the Fountains. The microgrid will also deliver resilience to United Parcel Service's Meadowlands warehouse facility, providing charging for up to 600 delivery trucks. This is the UPS warehouse that serves Manhattan.

Camden County Municipal Utilities Authority Microgrid

Working under a development agreement with the Camden County Improvement Authority and the City of Camden, Compass is also developing a resilient microgrid with local generation that will protect the CCMUA (who runs a water processing plant) and additional off-take customers in the Port of Camden. This project is also part of the New Jersey Board of Public Utilities' "Town Center Microgrid" program.

Additional studies

During Compass' incubation period at Navigant (Guidehouse), Compass developed project plans for two NYSERDA "New York Prizes": first, an analysis of the viability of the thermal energy system in the City of Buffalo, and second, a proposed resilient microgrid district for multiple hospitals along Clarkson Ave. in Brooklyn.

Platform partner experience

In addition to Compass' portfolio, our platform partners have extensive experience building and managing microgrids of all types and sizes, including some of the largest best-of-breed microgrids created to date. We will be happy to provide project quals for all our partners upon County request.

Founder Bio

Rick Bolton's 25 years of experience within the energy and Internet industries have given him a deep understanding of the ways in which policy, financing, and innovation can build new markets and fight climate change. He is the CEO of Compass Energy Platform, where he leads the company's mission to develop and finance 21st century energy infrastructure, help cities fight climate change and build more resilient economies and communities. He leads the company's work to define, assess, and build locally generated energy (including solar, wind, fuel cells, energy storage, CHP, and biomass), microgrids, electric transportation, and smart city assets. Prior to his current position, he held the position of Director, New Projects at Navigant Consulting, serving as an "intrapreneur," leading the effort to create Compass Energy Platform. Previously, he was Lead, Project Origination at Energizing Co., a Los Angeles-based investment and development platform focused on community-scale grid modernization projects in Canada

and the United States. He led origination related to the company's $250MM project financing fund with Stonepeak Investment Partners.

Before his work in the energy industry, he founded several startups, including digital entertainment retailer Film Fresh, where as CEO he oversaw financing, content sourcing, technical development, market analytics, and customer satisfaction, growing that company to a successful exit in 2013. He also ran the digital design and branding company Fresh Machine, responsible for the brand rollout of the Toyota Scion. He previously served as Director of Broadband & Future TV for the digital agency Razorfish. Early in his career, he was a successful academic, teaching in the MIT Media Lab, among other institutions.

Contact Details

21C LLC d/b/a Compass Energy Platform
4000 Division St.
Los Angeles, CA 90065
https://compass.energy
FEIN # 85-3637022
DUNS # 06-834-3561

Contact:
Rick Bolton
Chief Executive Officer
rick.bolton@compass.energy
(310) 801-0076