EDF CLIMATE CORPS

Fellowship Onboarding Guide

Welcome to EDF Climate Corps!

In order to *maximize your success* from the very beginning of the fellowship, EDF has developed this Fellowship Onboarding Guide. This is a list of questions to help prompt the necessary conversations at your host organization to get you started on your work.

We recommend you look over these questions prior to your arrival on-site at your fellowship facility/facilities. Which (internal) stakeholders will you meet in your first few weeks? Take the opportunity to learn about *why* your organization is in their current state of energy management and *how* you might help them make progress in adopting advanced energy management practices.

Be sure to reference the fellow handbook and the Climate Corps resource library for additional information on projects and subject matter. Additionally, you can ask your engagement manager about engaging with EDF staff experts on clean energy projects.

How to Use This Guide

Step 1: Review the document to understand the structure and content areas.

Step 2: Select the sections that are relevant to your work.

Step 3: Identify the best questions from each relevant section.

Step 4: Integrate your chosen questions into meetings and interviews.

FAQ

Q: Do I have to get answers to all of these questions?
A: *No, choose the ones you find useful.*

Q. Do I have to submit the answers to these questions to EDF?
A. *No, these questions are meant to help you prepare for meeting different stakeholders*

Q. What if I have questions that aren't on this form? Can I still ask them?
A. *Definitely, the common questions listed below are meant to be a good starting point. They are by no means comprehensive.*

Q. How do I get more context if I don't understand a question below?
A. *Many of these questions are also listed in the CC Handbook, a reference manual with overviews of different energy savings opportunities.*

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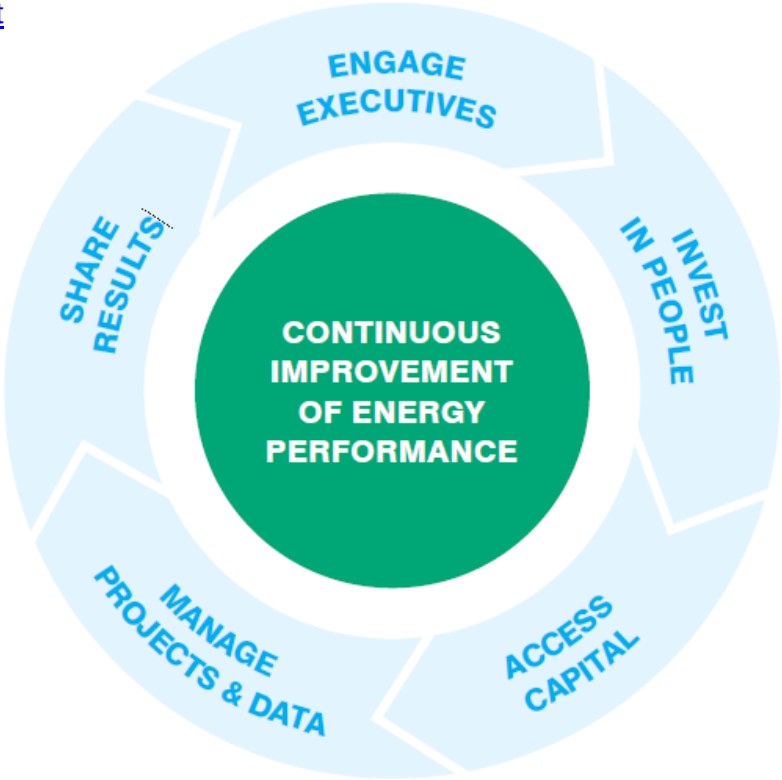

The Virtuous Cycle of Strategic Energy Management

ENGAGE EXECUTIVES/ORGANIZATIONAL OVERVIEW

Barriers and non-financial considerations to energy efficiency and sustainability

- ☐ What information-sharing, employee engagement and organizational change programs and mechanisms are in place and work well? Who is responsible for these and how can you collaborate to build upon those existing resources?
- ☐ What are the needs and challenges facing leaders representing different functional groups in relation to an energy efficiency effort?
- ☐ What are overarching organizational priorities, in the short-, mid- and long-term? Where does savings investment fall in line with those priorities and what factors may put those priorities at risk?
- ☐ What is the quality and quantity of data available to inform a program and measure progress?
    - How can these data be used to align program goals with organizational goals?
- ☐ What are the most effective means of gathering and sharing information? What are the formal and informal mechanisms for doing so? What information needs to be shared with whom and for what purpose?
- ☐ What stakeholders outside of staff and leadership should be engaged in an energy efficiency effort?
- ☐ Does your organization have GHG or energy reduction goals? Are they public or private? Are they absolute or relative? How are they reported?
- ☐ What kind of building certification and environmental recognition programs is your organization involved with? How does it report on sustainability?

INVEST IN PEOPLE

Employee Accountability & Expertise in Energy Management

- ☐ Who and/or how many people are responsible for energy management? What are their titles and where do they reside in the organizational chart?
- ☐ Are there teams of employees to advance and implement on-going energy efficiency initiatives and projects?
- ☐ Does the organization work with third-parties groups or consultants to manage and implement energy management?
- ☐ Has the organization established recruiting strategies and/or recruiting goals for increasing the quantity and quality of energy professionals brought in as new employees?
- ☐ Are employees given access to or encouraged to attend training and other educational resources for employees to become more capable and motivated to improve energy efficiency?

- For current employees who are responsible for energy management: what do they feel is the greatest barrier to implementing more/advanced energy management practices? (e.g. time, knowledge, motivation, accountability, support or formal responsibilities)
- Are employees involved in external networks, professional groups and/or other peer industry groups to stay abreast new policies, technologies and/or utility incentives related to energy management?

Employee Engagement

- How much influence does employee behavior have on energy consumption in equipment and systems? Are there groups of employees with that are more capable of influencing energy consumption?
- Are there Energy Management Systems, Building Management Systems or programmed/locked controls? How much interaction with equipment and system controls or building envelope, such as closing building doors and windows, do typical employees have?
- What other types of engagement programs are successfully in place, such as health and safety or customer service, and how were they implemented?
- What have been the most effective channels for communicating information or educating employees? What non-energy value might an employee engagement program create, and how can this be measured?
- Has the organization engaged its employees to explain, discuss, and begin implementing its energy reduction and/or greenhouse gas reduction goals?
- How involved are employees in driving other initiatives such as community service, health and safety, or internal waste management efforts?
- At what leverage points in the organization is employee engagement most valuable and what mechanisms and efforts will most effectively address these?
- What barriers to engagement may be encountered? How can they be addressed?
- What role might employee champions play in driving motivation, keeping information channels open, monitoring progress and reporting on barriers and successes?

ACCESS CAPITAL

Energy Efficiency Financing

- Who are the decision makers for approving capital and operating budgets, and what are the typical budgeting processes? Does the organization have specialized budgeting methods for energy efficiency investments?
- When are budgets determined for each department? Is there flexibility in this process or is it fixed?

- What discount rate does the host organization typically use? How was this discount rate determined? Are there different rates for different levels of investment risk?
- What are other metrics or criteria that financial decision makers use to plan and approve projects?
    - What is the organization's hurdle rate?
    - Do decision makers consider the project IRR? MIRR? Payback period?
    - Does the host organization use shadow pricing (internal carbon fee)?
    - How big a factor do external funding options or utility incentives play a role in the decision making?
- Does the host organization evaluate investments on a pre- or post-tax basis? If post-tax, what tax rate does the organization assume?
- When does the host organization choose leasing over purchasing assets?
- How are capital versus operating expenses determined?
- Is the investment threshold applied at the level of individual equipment pieces or is there aggregation of items installed at a particular site? For example, if four new energy efficient motors are installed in one site's walk-in cooler, and individually each motor falls below the capital investment threshold, but when added together they exceed the threshold, does the company typically capitalize these expenses?
- For hosts with multiple sites, are upgrades or equipment purchases that fall below the threshold of being classified as a capital investment but are implemented at a large number of sites, typically bundled together and thus treated as capital investments? If so, what is the bundling threshold?
- Are installation expenses or project management expenses capitalized? If so, are there special considerations to be aware of?
- How are following items depreciated?
    - Lighting equipment
    - Computers and office equipment
    - HVAC systems
    - Specialty equipment relevant to the organization (processing equipment for industrial facilities, cooking equipment for restaurants, etc.)
- Has the organization considered developing a revolving fund, or other central budget to support energy efficiency investment?
- Would the host consider using external financing (ESCOs, PACE, etc…) to finance energy efficiency upgrades?
- Can the host organization provide an analysis or presentation for a recent, successful investment?
- What types of services does the host organization outsource and how might those services impact energy efficiency project planning?
- Does the organization have an outside contractor that does preventative maintenance (PM) on a regular schedule and thus could help minimize installation costs associated with some efficiency upgrades by rolling in the installation expense with an already planned trip (that is paid for out of the PM budget, not the efficiency budget)?

MANAGE PROJECTS & DATA

Approach to Projects

- ☐ Does my organization invest in diversified portfolios of energy projects rather than on a case-by-case basis?
- ☐ Does every project require the same level of approval or are there different processes in place for projects of different sizes and costs?
- ☐ How does the organization categorize energy projects (costs vs. investments)?
- ☐ What energy efficiency projects were proposed in the past? Where any completed? Why were some approved and others not? If completed, how did actual performance compare to projected performance?
- ☐ Does my organization use the Investor Confidence Project (ICP) protocols or certified providers for developing and implementing energy efficiency projects?

Benchmarking Energy Usage

The facilities manager or head of operations should have information about electricity usage.

- ☐ Ask for monthly electricity bills going back at least two years. Is this information available through the utility's website?
- ☐ How many meters are in the building? What portion of the facilities do they cover?
- ☐ Check the lease agreement to determine if the organization pays the utility directly for energy use or if payments are made to the landlord or management company?
- ☐ What is the host organization's electric pricing or rate structure agreement?
- ☐ How many employees are located in the space?
- ☐ Are there any employee activities that drive significant incremental energy usage (e.g., high intensity computing)?
- ☐ What is the square footage of both the total building and tenant-occupied space?

Energy Management Systems (EMS)

Information should be gathered from the facilities manager, and consideration should be given to whether a building can benefit from an EMS installation or upgrade.

- ☐ Does the host organization currently use an Energy Management System (EMS)? If so, when was it installed?
- ☐ Does the host organization currently use one or multiple Building Management System(s) (BMS)?
- ☐ What is the building/floor's current peak demand?
- ☐ Does the host organization currently participate in a utility peak load curtailment program?
    - If so, what has the organization's experience been? If not, has the organization considered participating in such a program?

- What portion of efficiency controls is currently being controlled manually? What sensor and control points does the host organization's building currently employ?
- What additional sensor and control points would improve EMS performance?
- Does the facilities manager feel that building energy performance would benefit from increased automation of systems controls?
- If so, can EMS be configured to interface with existing sensors and system controls?

HVAC (Heating, Ventilation and Air Conditioning)

- Does the host organization own or lease its building space?
- Does the host organization pay the utility bill or is it included in the rent?
- Is the landlord (if not the host organization) interested in pursuing efficiency reductions for tax credits or other financial incentives?
- What type of HVAC system is in place? For example, is the system a packaged unit or centralized, and who is in charge of operating the system?
- When was the existing HVAC system installed?
- Has the host organization experienced any problems with the HVAC system?
- How do building managers control the HVAC system? Which controls are manual? Which controls are automated?
- Are there other systems opportunities that could benefit the HVAC system (for example, lighting upgrades, adding insulation or upgrading doors and windows)?
- What data on building temperature and energy consumption does operations staff have access to? How are the data delivered, recorded and tracked?
- Who conducts maintenance on the HVAC system (is it done internally)?
- What is the maintenance schedule?
- Has the HVAC system undergone recent recommissioning?
- What has been done to date to improve efficiency of the HVAC system?
- Is the HVAC system about to undergo a scheduled upgrade or replacement that could incorporate energy efficiency improvements?

Lighting in Commercial Buildings

A lighting engineer or specialist can offer a more detailed assessment. A lighting audit from an energy consultant or local utility would also assess potential lighting upgrades or projects.

- Where is the building geographically located?
- What is the age of the building?
- What is considered to be the main building activity, e.g. retail, food service, offices?
- How many weeks of the year is the building open? Are there any seasonal fluctuations?
- Does the host organization own or lease the space?

- If the host organization leases space, does the organization pay their utility bills directly or is a charge for utilities included in the rent?
- Who is the electric utility provider? Do they offer rebates or incentives for energy efficient lighting projects?
- If the host organization leases space, is the landlord interested in pursuing efficiency reductions for tax credits or other financial incentives?
- Who in the host organization has the authority to make lighting design and purchasing decisions?
- What upgrades have been made to lighting in the last three to five years?
- How often is the space renovated?
- How much indoor and outdoor lighting is required for security?
- Are there any official lighting policies in place? (E.g. lights dimmed after 6:30 pm.)
- Who has the authority to change these policies?
- What are the responsibilities of cleaning staff with regard to lighting? Is cleaning staff receptive to requests?
- Have there been complaints from building occupants about over- or under-lit spaces?
- To what degree, and in what areas, do building occupants have the ability to control or adjust lighting?
- Do any local or state ordinances restrict exterior lighting options?
- In addition, a rough estimate of lighting savings potential can be calculated simply by walking through each building area once during workday hours and then again after hours. A blueprint of the floor space is useful for this exercise. During a walkthrough, the following questions should be considered for each room or area:
    - What are the hours of occupied use? Are the lights on when the area is unoccupied? How long?
    - Is the lighting level adequate, inadequate or excessive?
    - Is daylighting (natural light) being used where possible?
    - Consider how lights are being controlled. Which lighting systems use timers? Which use occupancy or photocell sensors? Which are manually controlled?
    - What are the existing types and wattages of lamps used? What types of fixtures are used?
    - Are any fixtures, sensors or switches broken?

Water Heating

The facilities manager will most likely be the best source of information on water heating.

- Who owns or operates the water heating equipment, the building operator or the host organization?
- Who is financially responsible for the water heating and how is it billed? How much does the host organization spend on heating water annually?

- For what purpose is water being heated and how much water is needed?
- What types of water heaters (heat source) are in use?
- What is the *thermal efficiency percentage* of the existing water heater(s)?
- Does the building use central or distributed water heating equipment?
- What are the current temperature settings on the hot water heater(s)?

Plug Loads

An IT manager should be able to answer computer-related questions. Other office equipment (copiers, faxes, vending machines) may be the responsibility of the facilities or operations manager.

- Who is in charge of office equipment policy changes?
- How many PCs, laptops, copiers, printers and vending machines are in use at the host organization? What percentage of each is ENERGY STAR?
- What equipment is owned? Leased?
- If PCs are non-ENERGY STAR, what is the timing of the next upgrade cycle? Who is in charge of the computer selection and purchasing process?
- What percentage of computers and monitors are turned off at night?
- What power settings, if any, are used on most computers and monitors?
- What is the policy for using laptops vs. desktop computers?
- Who is in charge of configuring and maintaining office computers? Has the organization explored installing auxiliary computer power management software?
- Are the power-save settings turned on for printers and copiers?
- Are printers and copiers set to print duplex by default?

Data Centers and IT Equipment

- Is there a current and accurate inventory of the organizations IT equipment?
- Has an operational risk assessment and contingency evaluation been performed on the organizations critical IT infrastructure?
- Where are servers located? (In server closets in offices; in organization-owned data centers; or in leased data center space [co-location]?) Are IT services outsourced?
- What is the utilization of server capacity? Less than 5% indicates a large opportunity to increase hardware utilization; 30–50% is relatively good, but may still offer opportunities for improvement.
- What is the data center power utilization effectiveness (PUE)?
- A reasonable target for retrofit efforts is 1.5; industry average PUE is about 2.0. How frequently is PUE measured (ideal is continuously calculated)?
- Who (which department) pays for data center energy and operating costs?

- What is the organization's policy on IT equipment refresh? How much of IT hardware is older than three years (industry best practice is to replace equipment every two years due to improved efficiency and performance, acceptable is 3-4 years, anything older than 4 years needs to be replaced).
- Is life cycle analysis (including direct and indirect energy use) performed when evaluating new equipment purchases, replacements or expansions?
- Who is responsible for IT strategy and data center investments?

Industrial Facilities

The information below can be gathered from the plant engineer, production manager, financial analyst and maintenance manager (it is unlikely any one individual will have all of this).

- What is the overall facility production process flow? Where in the process is energy used?
- What are the key constraints (limits) to production volume and quality?
- Is there a list of major energy-using equipment with sizes and equipment specifications (motors, boilers, furnaces, compressors, chillers, etc.)?
- What systems or equipment have the largest cost or carbon impact? What portion of the plant total do these represent? What is the utilization of this equipment (how much is it actually used for production vs. how much capacity does it have)?
- What productivity improvement projects are being considered for this equipment/systems? What impact on energy do these proposals have? Is energy impact being considered in these proposals? Has a lifecycle-cost analysis been done on alternative options for these proposals?
- What is the budget and funding process for both maintenance repair projects and for capital projects?
- What process improvement efforts have been made in the past (Lean, Total Quality, etc.)? Was energy cost or carbon considered in these efforts? Who owns process improvement efforts?
- How is energy measured and monitored? What data are available at the system or equipment level? Can energy use be estimated for systems or equipment that are not directly monitored?
- What non-energy factors are most important to the organization and key decision makers (different decision makers may prioritize factors differently)? How are these potential barriers to energy efficiency projects? Can they be leveraged to help achieve approval for projects?

Demand Response (DR)

- Is your host doing DR today? If yes, collect details if available: what utility, what programs, how do they do it, amount they saved, amount they earned.
- What kind of building management or automation systems exist (or not?)
- How is the building used (when is it occupied, what is it used for?) Are there any energy intensive activities such as refrigeration, manufacturing, data centers?

- ☐ Are you able to discern attitudes and perceptions to the concept of demand response?
- ☐ Who are the key partners in the organization to help with next steps?
- ☐ Can you determine electricity bill spend? Do you understand the host's rate structure? What about "demand charges"?
- ☐ Does your host have historical baseline energy usage data? Is the data at the meter level (whole building) or "disaggregated" by load type?
- ☐ Is there a clear "demand curve"? Can you identify "peaks"? If no historical data, can you develop a baseline?

Solar PV

- ☐ Are there solar PV arrays already, or has the company considered them in the past?
- ☐ Does the property have an unobstructed site for the solar with clear access to the sun?
- ☐ Would your host prefer to use the solar energy onsite, or would they sell the renewable energy credits?
- ☐ If your host would use the energy onsite, what is the total energy use of the facility and what percentage of energy would they like to supply from the solar array?
- ☐ What is the corporate culture regarding risk-return preferences, specifically related to the ownership of long-term, high-quality assets? (Would they prefer to purchase or lease?)
- ☐ Can the host organization take advantage of tax incentives or other rebates for solar?

SHARE RESULTS

Stories and Sharing

- ☐ Are success stories related to energy savings shared with executives? Internal stakeholders? External stakeholders?
- ☐ Do energy efficiency success stories shared with the executive team frame results in terms of profits generated, costs saved, risks reduced, and/or competitive advantages?
- ☐ Are there individuals within the public relations or media teams who work on sharing stories about the organization's energy management practices and efforts?
- ☐ Do employees responsible for implementing energy management work with other departments to share results?
- ☐ Are energy savings tied to organizational goals for GHG emissions reductions?
- ☐ What communication channel(s) are used to share success stories (e.g., website, press releases, annual sustainability reports, etc.)?
- ☐ What is the frequency of communications around energy management? How do they differ for the executive team, internal stakeholders and external stakeholders?
- ☐ Does the organization participate in sustainability or energy-related conferences to share energy efficiency success stories and learn from other organizations? Is there interest in pursuing these avenues for recognition of existing efforts?