

# Energy Planning & Sustainable Development

## INTRODUCTION

- This training course will help the public and private sectors leverage global best practices on long-term energy portfolio planning, resource management, climate change mitigation strategies, environmental sustainability, and social impact. The entire cycle of energy planning toward a sustainable future—starting with envisioning a sustainable energy future, to reconciling differing (and often conflicting) stakeholder perspectives, to analyzing the costs and benefits of various energy plan options, to selling those plans to decision-makers, to finding 80/20 common grounds, to developing an energy implementation plan with specific activities and responsible parties and timelines.
- It will give a better understanding of the types of long-term planning—from the traditional utility-based Integrated Resource Planning (IRP) to the nascent IRRP that adds an "R" for Resilience to climate change pressures, to more grassroots plans that communities may adapt to meet various goals including carbon neutrality—and which types work best for them.
- This will be added granularity to the sustainable energy plans in the two major energy sectors—electricity and transportation—that begin with establishing a baseline that characterizes the current energy scenario and then advances to define pathways to achieving the desired “end-state” of the community that is defined by the Vision, Goals, and Strategies set earlier.

## OBJECTIVES

- The participants will benefit from gaining a working knowledge of how to assemble the pieces necessary to help a community decide on what sustainable development means to its members; to tap into the right resources which as a coordinated team can effectively “see the big picture” of a sustainable energy future, as well as “dot the i’s” of detailed energy planning; to decide what kind of sustainable energy plan would work best for their community; take necessary actions to measure current scenarios and chart the course to make more desirable scenarios a reality in the near- to medium-term; and then design and implement a plan to make that desirable scenario happen. And in the process, give future generations a better world through responsible resource management and energy planning.

By the end of this training course, the participants will be able to:

- Elucidate the connection between sustainable development—from the original Brundtland Report—and sustainable energy
- Understand the need for energy to drive economic development
- Select a diversified set of stakeholders to design a sustainable energy plan for the electricity and/or transportation sectors
- Acquire and analyze inputs from those select stakeholders and from many other reliable data sources to design a visionary yet achievable sustainable energy future
- Implement a sustainable energy planning initiative

## TRAINING METHODOLOGY

- The participants in this training course will receive thorough training on the subject, utilizing various proven adult learning teaching and facilitation techniques, including a brief assessment of participant names, roles, and interests. It also contains charts, illustrations, pictures, and embedded website hyperlinks, videos, case studies, practical problem-solving sessions, and interactive discussions. The PowerPoint will be engaging and aesthetically appealing with a focus on information graphics.

## ORGANISATIONAL IMPACT

- The organization will benefit from sending the employees to attend this training course as they will be able to relate lessons learned from this training course to develop and implement a sustainable energy planning process; this knowledge will add monetizable value to the organization as well as a competitive edge over their competitors in the sustainable development and clean energy realm.

The organization can leverage knowledge and skillsets, such as:

- The ability to leverage their current staff qualifications to take the concept of sustainable development, and apply it to planning a more responsible energy future for their clients
- Stock-taking of the skillsets necessary to plan the responsible use of natural resources to provide the energy necessary to drive the economic development of their communities
- Gaining a better understanding of the connection between a community's desire to make positive change and the steps necessary to turn that desire into a reality with strategic planning
- Gaining insights into the motivations of various stakeholders in their adoption of or objection to change
- Knowing how energy generation technologies convert sustainable energy resources into electricity, heat, cooling, transport, and other energy services
- The ability to see and overcome the potential roadblocks along the path from the vision and the implementation of a sustainable energy plan

## PERSONAL IMPACT

- The participants will be able to leverage the gained knowledge and skillset to become a leader in their organization and advance their career based on ethical and practical value-add.
- Apply first-hand knowledge of sustainable development to the responsible generation, delivery and use of energy
- Conduct sustainable energy planning in their communities—based on drivers for change, a common vision and consensus-based goals, political realities, attitudes toward change, levels of available local energy resources, and other planning elements addressed in the training course
- Gain a deeper understanding of the technical, economic, the marketplace, policy, regulatory, environmental, and social concepts related to sustainable energy planning and implementation
- Connect the dots between the big picture concept of sustainable development to the nitty-gritty details needed to develop a responsible energy plan that will be in effect for years or decades
- Increase the knowledge base, which can help them decide on possible career choices or new focal areas

## WHO SHOULD ATTEND?

- This training course is ideal for public, private, NGO, and international development sector stakeholders responsible for long-term energy portfolio planning, resource management, climate change mitigation strategies, environmental sustainability, social impact, and economic development.

This course is suitable for a wide range of sustainable development and clean energy professionals from many sectors, but will greatly benefit:

- Urban Planners
- National and Subnational Ministry/Agency of Energy Officials
- National and Subnational Ministry/Agency of Planning Officials
- National and Subnational Ministry/Agency Resource Planning Officials
- National and Subnational Ministry/Agency Economic Development Officials
- National and Subnational Ministry/Agency of Transportation Officials
- Transportation Fleet Managers
- Electric Utilities and Regulators
- Independent Standards Operators/Regional Transmission Operators
- Campus Facility Managers
- Defense Installation Energy Managers
- Climate Change Mitigation Professionals
- Climate Change Adaptation Professionals
- Sustainable Energy and Fuel Products and Services Providers
- Non-governmental Organizations

## Course Outline

### Envisioning a Sustainable Energy Future Through Stakeholder Engagement

- Scoping
- Sectors
- Players
- Political Sensitivities
- Timelines
- Engaging Stakeholders to Design and Implement the Plan
- Selecting the Right Stakeholders
- Envisioning the Desired End-state
- Setting the Baseline
- Proposing Goals and Strategies
- Driving Consensus
- Implementing the Plan
- Defining Sustainable Development
- Brundtland Report
- Resource Depletion
- Environmental Impact

- Intergenerational Equity
- Cradle-to-cradle Design Considerations
- Identifying Drivers for Change
- Environmental impact
- Social
- Economic
- Carbon Neutrality
- Agreeing on the Basics
- Scientific-based Principles
- Laws of Thermodynamics
- Civility
- Facilitating buy-in
- Acknowledging Dissent
- Reconciling Conflicting Viewpoints
- Inclusivity
- Social Equity
- Economic Growth
- Cost-effectiveness (e.g., least cost vs. best value)

## Types of Sustainable Energy Planning

- Sustainable Energy Planning from Different Angles
- Sectoral
- Climate Change
- Utility
- Transportation Manufacturer
- Environmental
- Resource Management
- Intergenerational Equity
- GESI
- Economic
- Types of Plans
- Integrated Resource Planning
- Integrated Resource & Resilience Planning
- Long-term Planning
- Energy Sustainability Planning
- Hybrids
- Sustainable Electricity Resources & Technologies
- Demand Reduction
- Solar
- Wind
- Water
- Biomass
- Hydrogen
- Natural Gas
- Sustainable Transportation Resources & Technologies
- Demand Reduction
- Food vs. Fuel Debate

## Planning a More Sustainable Electricity Future

- Setting the Baseline
- Population, Immigration, and other Demographic Considerations
- Load Assessment
- Technical Feasibility
- Economic Feasibility
- Enabling Policy Gap Analysis
- Costs and Benefits
- Charting the Path to your Goals
- Minimizing Electricity Demand
- Centralized Electricity
- De-centralized Electricity

## Planning a More Sustainable Transportation Future

- Setting the Baseline
- Population, Immigration, and other Demographic Considerations
- Load Assessment
- Technical Feasibility
- Economic Feasibility
- Enabling Policy Gap Analysis
- Costs and Benefits
- Charting the Path to your Goals
- COVID and WFH
- Efficiency Standards
- Walkable Communities
- Ride Sharing
- Public Transportation

## Implementing the Sustainable Energy Plan

- Plan Basics
- Who decides on the plan's elements?
- Who is responsible for making this happen?
- How do we convince the right people to agree to this?
- Who pays?
- Will the plan require legislation?
- How will this happen?
- How soon can this happen?
- Plan Recommendations Basics
- Sustainable Energy Plan Implementation Team
- Public-Private Partnerships
- Models
- Tracking Progress