



MUNICIPAL ENHANCED ENERGY PLANNING IN VERMONT

Best Practices and Resources

Central Vermont Regional Planning Commission

December 10, 2019



Overview

- Developing a Municipal Enhanced Energy Plan
 - Plan Preparation and Practical Advice
 - Plan Requirements
 - Plan Adoption
 - Plan Monitoring
- Effective Use of Municipal Plans in the Section 248 Process



Developing a Municipal Enhanced Energy Plan


Our Work So Far

Years 1 and 2 (2017 and 2018)

- Barre City
- Barre Town
- Calais
- East Montpelier
- Waterbury
- Warren

Year 3 (2019)

- Middlesex
- Moretown
- Plainfield
- Waitsfield
- Woodbury



Step 0.5: Why adopt an Enhanced Energy Plan?

- Desire to establish pathways to achieving 2050 goals.
- Decision to establish clear criteria for preferred site designation.
- Ability to achieve substantial deference before Public Utility Commission.
 - Establish clear community standards to be applied for the designation of unsuitable locations for development in Town.

Plan Preparation

- Local Capacity and Interest
 - Contact CVRPC
 - Build Local Consensus
- Understand the Requirements
- Review Existing Municipal Plan
- Review Enhanced Energy Plans in the neighboring municipalities

Energy Planning Standards for Municipal Plans

Instructions

Before proceeding, please review the requirements of Parts I and II below, as well as the Overview document. Submitting a Municipal Plan for review under the standards below is entirely voluntary, as enabled under [Act 174](#), the Energy Development Improvement Act of 2016. If a Municipal Plan meets the standards, it will be given an affirmative “determination of energy compliance,” and will be given “substantial deference” in the Public Service Board’s review of whether an energy project meets the orderly development criterion in the Section 248 process. Specifically, with respect to an in-state electric generation facility, the Board:

[S]hall give substantial deference to the land conservation measures and specific policies contained in a duly adopted regional and municipal plan that has received an affirmative determination of energy compliance under 24 V.S.A. § 4352. In this subdivision (C), “substantial deference” means that a land conservation measure or specific policy shall be applied in accordance with its terms unless there is a clear and convincing demonstration that other factors affecting the general good of the State outweigh the application of the measure or policy. The term shall not include consideration of whether the determination of energy compliance should or should not have been affirmative under 24 V.S.A. § 4352.

Municipal Plans should be submitted by the municipality’s legislative body to the Regional Planning Commission (RPC) if the Regional Plan has received an affirmative determination of energy compliance. If a Regional Plan has not received such a determination, until July 1, 2018¹, a municipality may submit its adopted and approved Municipal Plan to the Department of Public Service (DPS) for a determination of energy compliance (determination), along with the completed checklist below. After a Municipal Plan and completed checklist have been submitted to the RPC (or DPS), the RPC or DPS will schedule a public hearing noticed at least 15 days in advance by direct mail to the requesting municipal legislative body, on the RPC or DPS website, and in a newspaper of general publication in the municipality. The RPC or DPS shall issue a determination in writing within two months of the receipt of a request. If the determination is negative, the RPC or DPS shall state the reasons for the denial in writing and, if appropriate, suggest acceptable modifications. Submissions for a new determination following a negative determination shall receive a new determination within 45 days.

The plans that Municipalities submit must:

- Be adopted
- Be confirmed under 24 V.S.A. § 4350
- Include an energy element that has the same components as described in 24 V.S.A. § 4348a(a)(3)
- Be consistent with state energy policy (described below), in the manner described in 24 V.S.A. § 4302(f)(1)
- Meet all standards for issuing a determination of energy compliance (see below)



Plan Preparation

- Stand Alone Plan or Integrated Plan
- Determine Responsibilities
- Develop Schedule



Plan Requirements

- Analysis and Targets
 - Data
- Pathways and Implementation Actions
- Mapping

Plan Requirements – Analysis and Targets

- Data
 - Review CVRPC Data
 - Community Energy Dashboard
 - Efficiency Vermont
- Add Graphics
- Remember: Estimates are OK!

DRAFT – City of Montpelier

1

Municipal Breakout - Energy Data

The following is a breakout of current and future energy use and targets for the City of Montpelier.

The intent of the Municipal Template is to provide the municipality with data that can be used to ensure compliance with the requirements of Act 174 and "Enhanced Energy Planning" (24 V.S.A. 4352). This document contains data that estimates current energy use and provides targets for future energy use across all sectors (transportation, heating, and electricity). It also sets targets for renewable energy generation within the municipality. This data is meant to be a starting point for the municipality to begin planning its energy future and to talk about the changes that may need to occur within the municipality to ensure that local, regional and state energy goals are met. This includes the goal that 90% of all energy demand be met by renewable sources by 2050.

Estimates of current energy use consist primarily of data available from the American Community Survey (ACS), the Vermont Agency of Transportation (VTrans), the Vermont Department of Labor (DOL), and the Vermont Department of Public Service (DPS). Targets for future energy use are reliant upon the Long-range Energy Alternatives Planning (LEAP) analysis for the region completed by the Vermont Energy Investment Corporation (VEIC). Targets for future energy generation have come from the regional planning commission and DPS. For more information on LEAP, see [CVRPC's website](#). Targets for both future energy use and energy generation have been generally developed using a "top down" method of disaggregating regional data to the municipal level. This should be kept in mind when reviewing the template. It is certainly possible to develop "bottom up" data. For those municipalities interested in that approach, please see the Department of Public Service's Analysis and Targets Guidance.

Figure 1 – Data Sources

| |
|--|
| ACS – AMERICAN COMMUNITY SURVEY |
| DOL – VERMONT DEPARTMENT OF LABOR |
| DPS – VERMONT DEPARTMENT OF PUBLIC SERVICE |
| EA – ENERGY INFORMATION ADMINISTRATION |
| EVT – EFFICIENCY VERMONT |
| LEAP – LONG-RANGE ENERGY ALTERNATIVES PLANNING |
| VEIC – VERMONT ENERGY INVESTMENT CORPORATION |
| VTRANS – VERMONT AGENCY OF TRANSPORTATION |

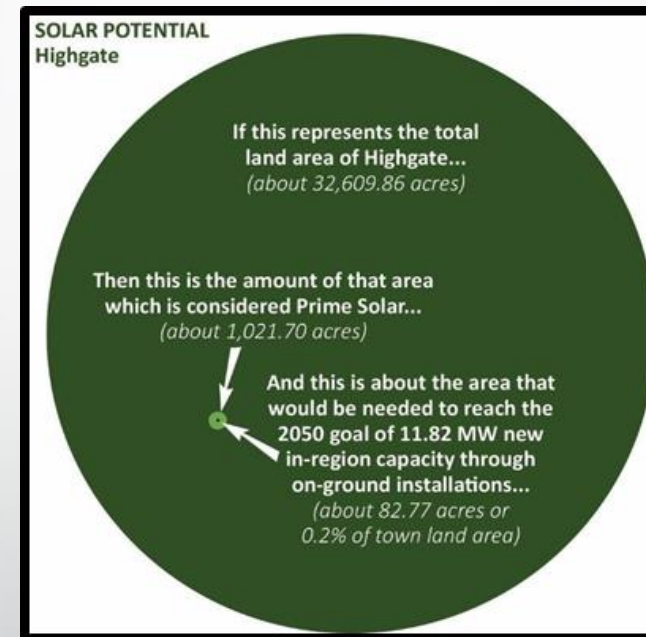
There are some shortcomings and limitations associated the data used in the Municipal Template. For instance, assumptions used to create the LEAP analysis are

DISCLAIMER: The information contained herein represents estimated conditions based on current available data. It is intended to be a representation of possible conditions and should be used for planning purposes only. More in-depth analysis or evaluation should be done to verify or confirm actual conditions for each scenario represented as errors or omissions may exist within the data.

Analysis and Targets: Graphic Examples



*Dorset DRAFT Municipal Plan:
Solar Scale Examples*



Available Energy Planning Data



ENERGY ACTION NETWORK

Efficiency
Vermont



ENERGY ACTION NETWORK

- Community Energy Dashboard

BrighterVermont 

CommunityEnergyDashboard

BUILDING A BETTER ENERGY FUTURE. TODAY.



Annual, Quarterly Reports

[Link](#)

- Focused on Savings (MWH, MMBTU)
- Breakdowns by measure, utility territory, customer market
- No town level data

RPC Report (data by Region, Town) [Contact CVRPC](#)

| | |
|-------------------------|---|
| Electric Usage* | Residential |
| Annual Savings | KWWhs, MMBtus, customer cost |
| Residential | HPwES counts, total project counts, measure counts by category. |
| Commercial & Industrial | Customers served, project counts, measure counts by category. |
| EV Registrations | EV and PEV registration counts |



This report was produced on 3/15/2019

| Central Vermont Regional Planning Commission Regional Summary | | | | |
|--|-----------------------------|-------------|-------------|-------------|
| Electric Utility Data | KWH Usage by Year | | | |
| Includes the Usage for all towns within the Central Vermont Regional Planning Commission | Sector | 2016 | 2017 | 2018 |
| | Commercial & Industrial | 250,768,723 | 232,523,410 | 241,902,526 |
| | Residential | 196,856,959 | 192,161,364 | 197,004,843 |
| | Total | 447,625,682 | 424,684,774 | 438,907,369 |
| | Average Residential Usage | 6,313 | 6,228 | 6,360 |
| | Count of Customer Premises* | | | |
| | Sector | 2016 | 2017 | 2018 |
| | Commercial & Industrial | 5,595 | 5,488 | 5,475 |
| | Residential | 31,182 | 30,856 | 30,974 |
| | Total | 36,777 | 36,344 | 36,449 |

Efficiency Vermont receives billing data (customer information and monthly usage data) from Vermont electric distribution utilities for the purpose of supporting energy efficiency programs and services. As a result, the accuracy customer counts and consumption data contained in this report is completely dependent on the quality and availability of data provided by each electric distribution utility. All utility data contained in this report is subject to regular updates and corrections as needed.

Efficiency Vermont has not received billing data from Hardwick Electric Department since Q2 2016. Towns within this service territory will not display a complete set of annual usage data.

**Central Vermont Regional Planning Commission
Town Data**

Electric Utility Data

KWH Usage by Year

| | Sector | 2016 | 2017 | 2018 |
|------------|-------------------------------|-------------------|-------------------|-------------------|
| Barre City | Commercial & Industrial | 48,753,385 | 46,166,379 | 49,720,008 |
| | Residential | 39,148,238 | 38,305,326 | 39,380,465 |
| | Total | 87,901,623 | 84,471,704 | 89,100,473 |
| | Count of Residential Premises | 6,084 | 6,101 | 6,119 |
| | Average Residential Usage | 6,435 | 6,279 | 6,436 |
| | | | | |
| Barre Town | Sector | 2016 | 2017 | 2018 |
| | Commercial & Industrial | 6,877,854 | 7,739,442 | 5,785,157 |
| | Residential | 9,916,697 | 9,784,355 | 9,984,808 |
| | Total | 16,794,551 | 17,523,797 | 15,769,965 |
| | Count of Residential Premises | 1,439 | 1,437 | 1,425 |
| | Average Residential Usage | 6,891 | 6,809 | 7,007 |
| | | | | |
| Berlin | Sector | 2016 | 2017 | 2018 |
| | Commercial & Industrial | 36,121,178 | 34,663,175 | 34,468,329 |
| | Residential | 7,103,432 | 6,862,769 | 7,057,156 |
| | Total | 43,224,610 | 41,525,944 | 41,525,485 |
| | Count of Residential Premises | 1,043 | 1,047 | 1,050 |
| | Average Residential Usage | 6,811 | 6,555 | 6,721 |
| | | | | |
| Cabot | Sector | 2016 | 2017 | 2018 |
| | Commercial & Industrial | 13,841,152 | 12,074,012 | 13,221,563 |
| | Residential | 4,390,283 | 4,294,179 | 4,396,914 |
| | Total | 18,231,434 | 16,368,191 | 17,618,476 |
| | Count of Residential Premises | 690 | 693 | 696 |
| | Average Residential Usage | 6,363 | 6,197 | 6,317 |

**Central Vermont Regional Planning Commission
Town Data**

Commercial Measures Installed

| | | 2016 | 2017 | 2018 | Total |
|------------|-------------------------------|-------|-------|-------|--------|
| Barre City | Air Conditioning Efficiency | 1 | 6 | 6 | 13 |
| | Behavior | 0 | 0 | 0 | 0 |
| | Compressed Air | 0 | 0 | 1 | 1 |
| | Cooking and Laundry | 2 | 0 | 5 | 7 |
| | Design Assistance | 0 | 5 | 2 | 7 |
| | Health and Safety | 0 | 0 | 0 | 0 |
| | Hot Water Efficiency | 1 | 0 | 0 | 1 |
| | Hot Water Fuel Switch | 0 | 0 | 0 | 0 |
| | Hot Water Replacement | 0 | 0 | 1 | 1 |
| | Industrial Process Efficiency | 0 | 1 | 0 | 1 |
| | Light Bulb/Lamp | 5,277 | 3,380 | 4,696 | 13,353 |
| | Lighting Efficiency/Controls | 137 | 68 | 168 | 373 |
| | Lighting Hardwired Fixture | 2,194 | 2,917 | 2,011 | 7,122 |
| | Motor Controls | 0 | 0 | 0 | 0 |
| | Motors | 0 | 0 | 1 | 1 |
| | Office Equipment, Electronics | 0 | 0 | 0 | 0 |
| | Other Fuel Switch | 0 | 0 | 0 | 0 |
| | Refrigeration | 2 | 33 | 48 | 83 |
| | Space Heat Efficiency | 1 | 0 | 21 | 22 |
| | Space Heat Fuel Switch | 1 | 0 | 0 | 1 |
| | Space Heat Replacement | 1 | 0 | 15 | 16 |
| | Thermal Shell | 0 | 0 | 3 | 3 |
| | Ventilation | 15 | 0 | 12 | 27 |
| | Water conservation | 0 | 0 | 1 | 1 |

Where to Look for...

- Thermal Energy
- Wind / Hydro / Solar
- Biofuel
- Storage
- EV's, Charging Stations
- Financing Opportunities

Energy Dashboard

- Lifetime Project Savings
- Total CO₂ savings
- Home Energy Visits
- Residential New Construction

- Energy Star Projects
- Commercial & Industrial Savings
- MMBtus & Customer Cost Savings

Efficiency VT RPC Report

- Small Business Walkthroughs
- Moderate Income Weatherization
- DIY Weatherization

Efficiency VT RPC Report V2 – Coming Early December 2019

Plan Requirements – Pathways

- Existing Policies
 - In your municipality
 - Or in other municipalities....contact CVRPC
- Municipal Capacity and Jurisdiction
- Delegate Responsibility
- Integrate Into Capital Budgeting

Objective A-2: Promote energy efficiency in the design, construction, renovation, operation, location and retrofitting of systems for buildings and structures.

Energy efficient building designs provide benefits to the owners and occupants by reducing the amount of energy needed to heat, cool, and maintain the mechanical systems within the building. Establishing and promoting energy efficiency in design, construction, retrofits, and renovations, as well as location will ensure new buildings and building practices will be more efficient into the future. These efficiencies can also lead to conservation of energy which can promote cost savings and affordability for owners and renters.

| | IMPLEMENTATION ACTION | RESPONSIBILITY | PRIORITY/ TIMELINE | MEASURE OF SUCCESS |
|---|---|---|------------------------|--|
| 1 | Support local organizations (including LEAP, Waterbury in Motion, Waterbury Farmer's Market and Food Council) in their efforts to assess, plan, finance, and promote specific efforts to meet the energy efficiency, conservation, and sustainability goals and objectives. | Municipality, local partners/organizations | High On-going | Support provided to local organizations |
| 2 | Partner with existing organizations to provide education and assistance on the development of "stretch codes" ¹⁰ for residential and commercial building standards. | Municipality, LEAP, Vermont Energy Investment Corporation | Medium 3 to 5 years | New regulations established as appropriate |
| 3 | Review zoning bylaws to consider including incentives for buildings that utilize a south-facing orientation. | Municipality | Medium 3 to 5 years | Bylaws reviewed and amended as appropriate to include incentives |
| 4 | Identify community organizations or existing businesses to develop or disseminate information regarding the use of landscaping for energy efficiency including the importance of tree canopies, pervious surfaces, and similar design practices. | Municipality, LEAP, local landscape companies | Low 5 to 10 years | Organizations identified and information distributed |
| 5 | Identify information or develop new materials that promote the use of Vermont's residential building energy label/score to inform the community of the importance of energy efficiency in building design and construction. | Municipality | Low 5 to 10 years | Materials developed and distributed |

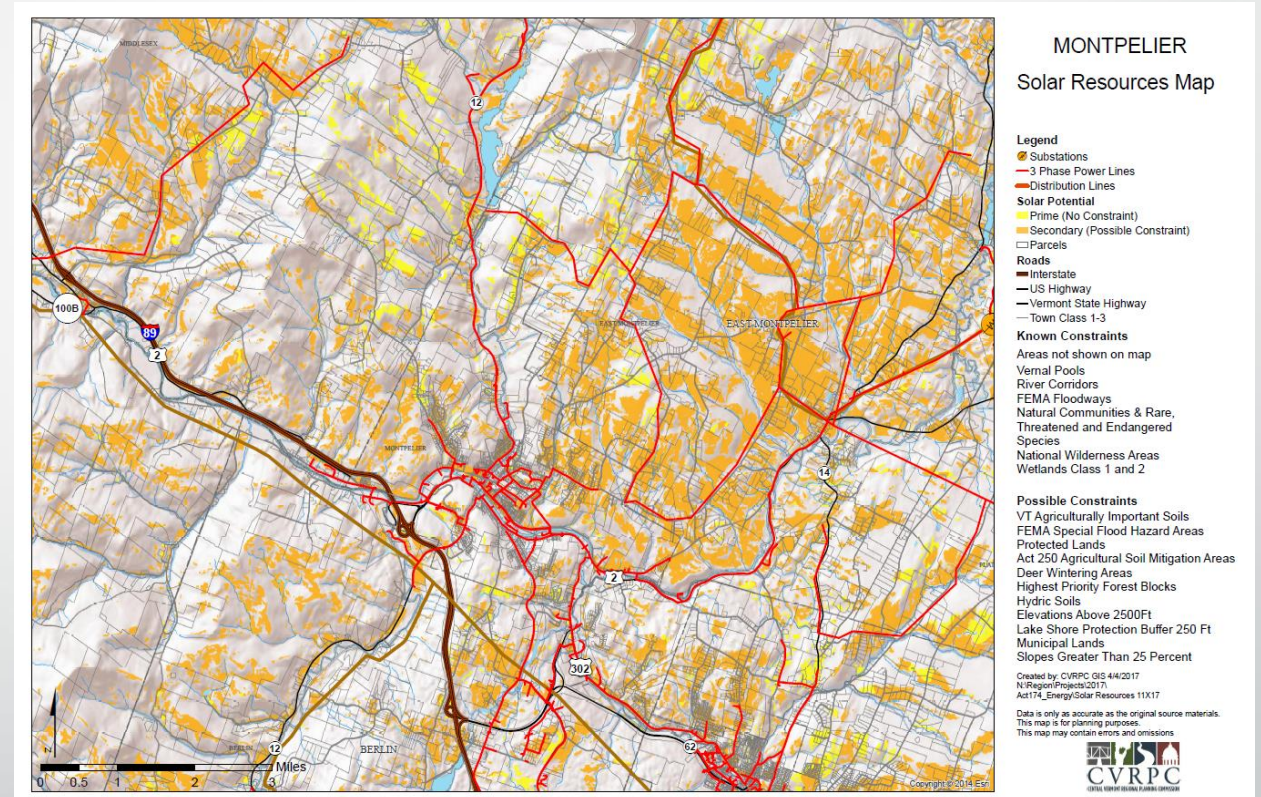
¹⁰ Vermont has Residential Building Energy Standards (RBES) and Commercial Building Energy Standards (CBES). Stretch energy codes are those that achieve greater energy savings than the base RBES and CBES by including more stringent requirements for design and evaluation of energy efficiency.

Pathways: Examples

- “Inventory and log fuel efficiency of all municipal vehicles and incorporate into the purchasing or replacement process.”
- “Encourage major employers in your municipality that operate private fleets (for example garbage collection, public transit, colleges and universities, or milk transportation) to switch some of their vehicles to electric or biodiesel-fueled vehicles. Help build awareness of related grant opportunities.”
- “Promote a working landscape outside of designated growth and residential areas, e.g. by working with land trusts and landowners of farm and forest tracts to conserve key parcels of land.”

Plan Requirements – Mapping

- Review CVRPC Maps
- Municipal Decisions
 - Preferred Sites
 - Local Constraints
 - Unsuitable Areas
- Clear Policy Statements



Preferred Sites

- Municipal Plan
 - Specific Sites Identified in Plan
 - Creating Process/Criteria
- Via Net-Metering Application
 - 9 Categories
 - Joint Letter
- Net-Metering Rules

Why designate preferred sites?

- Better rates for net metering
- In preferable locations
- Development of 150-500 kW
- Reach 2050 goals!

| Net Metered System | Statewide Average Rate | Siting Adjustor | REC Adjustor (if customer transfers REC to utility) | Final Rate with Adjustors (in cents/kWh) |
|---|------------------------|-----------------|---|--|
| < 15 kW, anywhere (I) | 15.4 | + 1 | +2 (+1 in 2019) | 18.4 (17.4 in 2019) |
| 15 – 150 kW, on preferred site (II) | 15.4 | + 1 | +2 (+1 in 2019) | 18.4 (17.4 in 2019) |
| 150 – 500 kW, preferred site (III) | 15.4 | - 2 | +2 (+1 in 2019) | 15.4 (14.4 in 2019) |
| 15 – 150 kW, not on a preferred site (IV) | 15.4 | - 3 | +2 (+1 in 2019) | 14.4 (13.4 in 2019) |

Plan Adoption

- Consistency with Municipal Plan
- Build Local Support
- CVRPC Review
 - Preliminary Review
 - Determination of Energy Compliance



DETERMINATION OF ENERGY COMPLIANCE

Determination of Energy Planning Compliance Pursuant to 24 V.S.A. §4352
Waterbury Municipal Plan, adopted December 3, 2018

I. Procedural History

1. On March 15, 2019, the Town of Waterbury submitted the Waterbury Municipal Plan to the Central Vermont Regional Planning Commission ("CVRPC") for a determination of compliance with the enhanced energy planning standards set forth in 24 V.S.A. §4352.
2. On May 22, 2019, notice of a public hearing scheduled for June 13, 2019 was posted on CVRPC's website.
3. On May 22, 2019, notice of a public hearing scheduled for June 13, 2019 was emailed directly to the Town of Waterbury and posted in 3 other locations within the region.
4. On May, 25 2019, notice of a public hearing scheduled for June 13, 2019 was published in the Barre Montpelier Times Argus newspaper.
5. On June 13, 2019, CVRPC's Town Plan Review Committee convened a public hearing at the Steele Community Room in the Waterbury Municipal Center located at 28 North Main Street, Waterbury, Vermont. After the public hearing, the Town Plan Review Committee recommended that the Waterbury Municipal Plan receive a determination of compliance with the enhanced energy planning standards set forth in 24 V.S.A. §4352.

6. On July 9, 2019 CVRPC's Board of Commissioners reviewed the recommendation of the

Plan Monitoring

- On-going Process
- Community Progress Maps - <https://www.vtenergydashboard.org/statistics>

Plan Implementation

- VEIC Contract
- 2019 Button Up Events
- Regional Energy Committee Roundtables

Modern Wood Heat Workshop



Join Us!

December 11

5:30-7:30pm

Barre City Elementary
& Middle School
Library

50 Parkside Terrace
Barre, VT 05641

Want to learn more about wood heat in 2019 and beyond? You're invited to join the Central Vermont Regional Planning Commission and:
Emma Hanson, Agency of Natural Resources Wood Heat Specialist
Andrew Perchlik, Director of Vermont's Clean Energy Development Fund

Persons with disabilities who require assistance or special arrangements to participate in programs or activities are encouraged to contact Nancy Chartrand at 802-229-0389 or chartrand@cvregion.com at least 3 business days prior to the meeting for which services are requested.





Municipal Plans in the Section 248 Process



Section 248

- Outlines Process
- Defines Parties
- Provides Criteria

Types of Applications

- Net-Metering
 - Categories
- Utility Scale Projects
 - Standard Offer Program
 - Power Purchase Agreements with Electric Utilities

Net-Metering and Net-Metering Categories

“Category I Net-Metering System” means a net-metering system that is not a hydroelectric facility and that has a capacity of 15 kW or less.

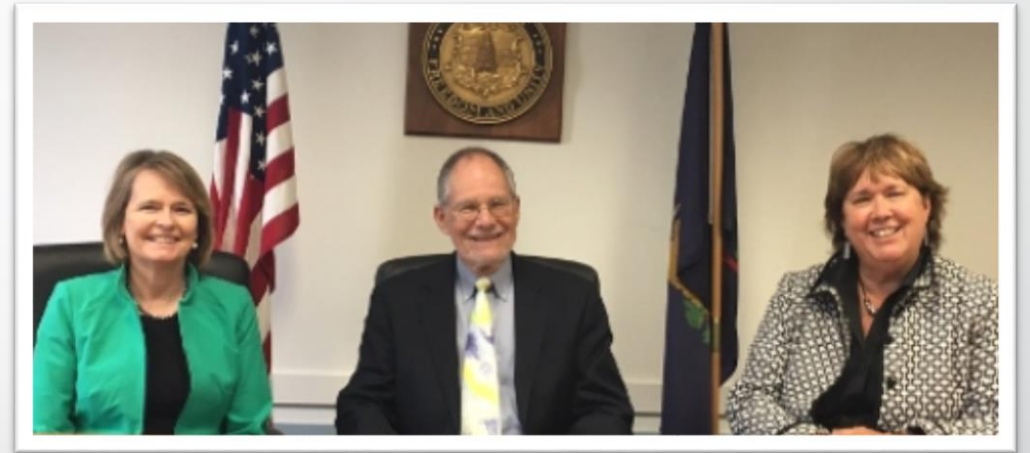
“Category II Net-Metering System” means a net-metering system that is not a hydroelectric facility that has a capacity of more than 15 kW and less than or equal to 150 kW, and that is sited on a preferred site.

“Category III Net-Metering System” means a net-metering system that is not a hydroelectric facility, that has a capacity of greater than 150 kW and less than or equal to 500 kW, and that is sited on a preferred site.

“Category IV Net-Metering System” means a net-metering system that is not a hydroelectric facility, that has a capacity of greater than 15 kW and less than or equal to 150 kW, and that is not located on a preferred site.

Who Can Participate and How?

- Formal Parties
 - Applicant
 - Department of Public Service
 - ANR
 - RPCs*
 - Municipality*
- Types of Involvement:
 - Formal Party to a Case “Intervenors”
 - Interested Persons
 - Members of the Public



Vermont's Public Utility Commission

What are the steps in the process?

- Net-Metering
 - Small (under 15 kW)
 - Large
- Utility-Scale Projects

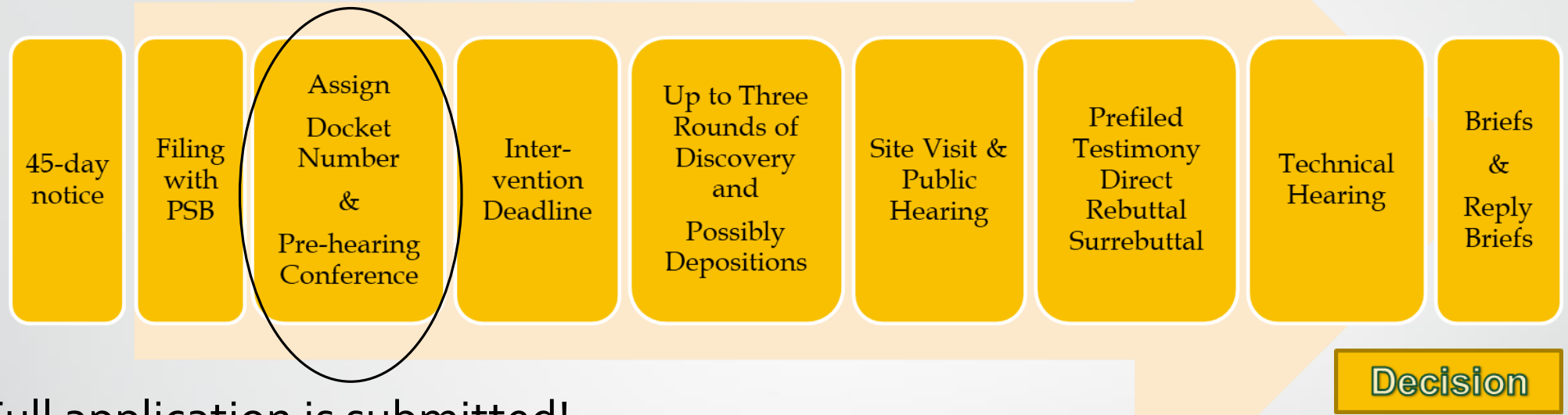




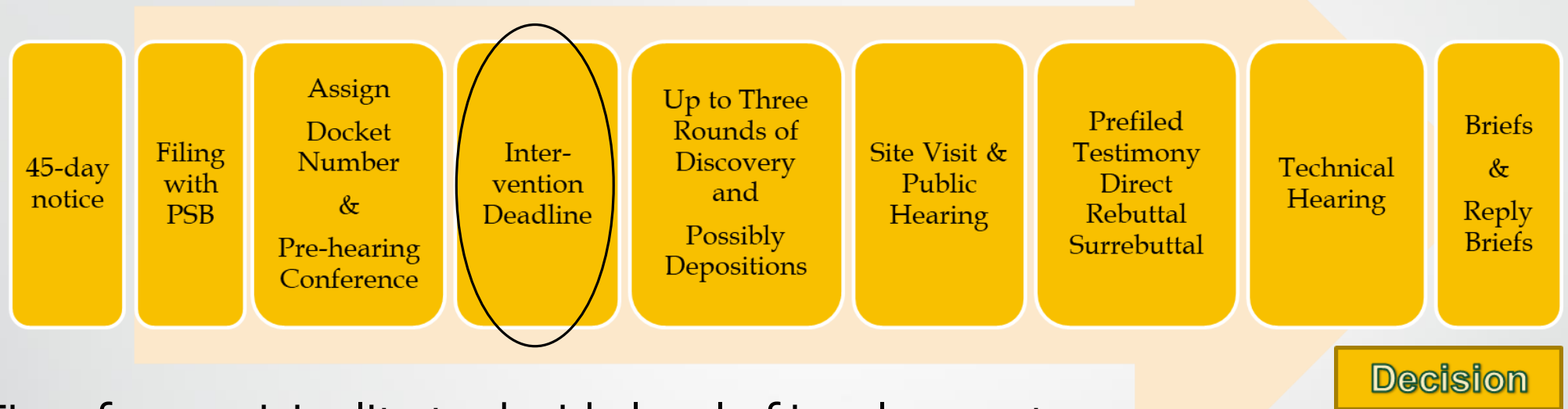
Solar developer proposes a large facility in a municipality.

The municipality:

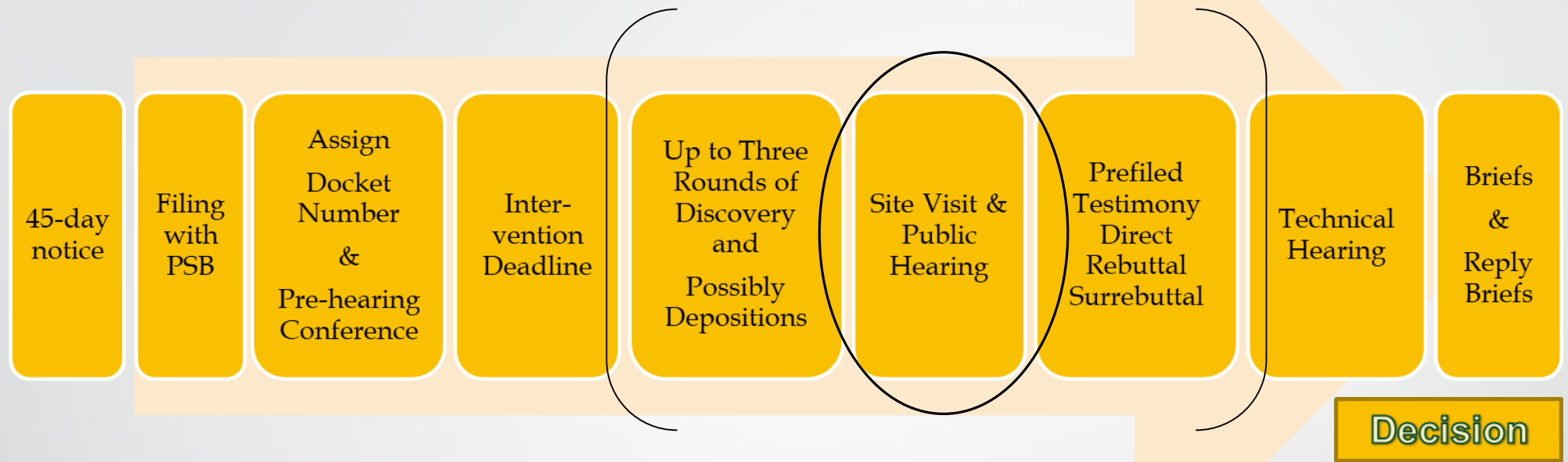
- Holds a public hearing at a Planning Commission meeting
- Submits comments 7 days ahead of filing summarizing activities



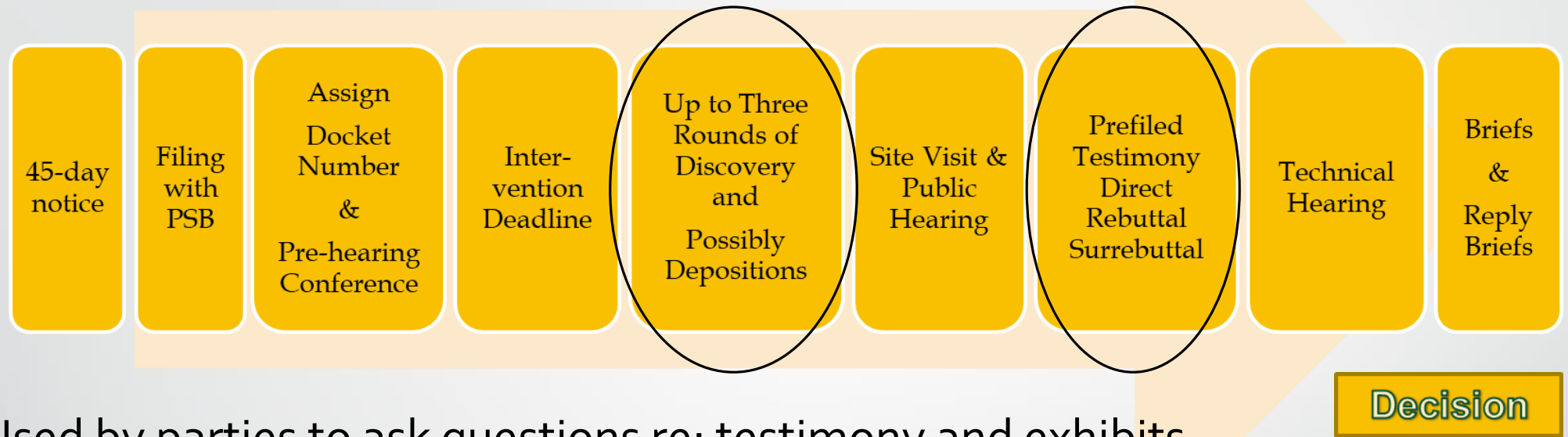
- Full application is submitted!
- Parties are identified, schedule and deadlines created,
- Small net metering facility? No pre-hearing conference.
 - This developer is proposing a large facility, so there is a PHC.



- Time for municipality to decide level of involvement:
- Intervention vs. Public Comment
 - Time, Cost, and Municipal Capacity
- Questions to consider:
 - Solve any conflicts in 45 day notice? What is the project's positive/negative impact on community? Benefits/costs of intervening? Which criteria is concerning?



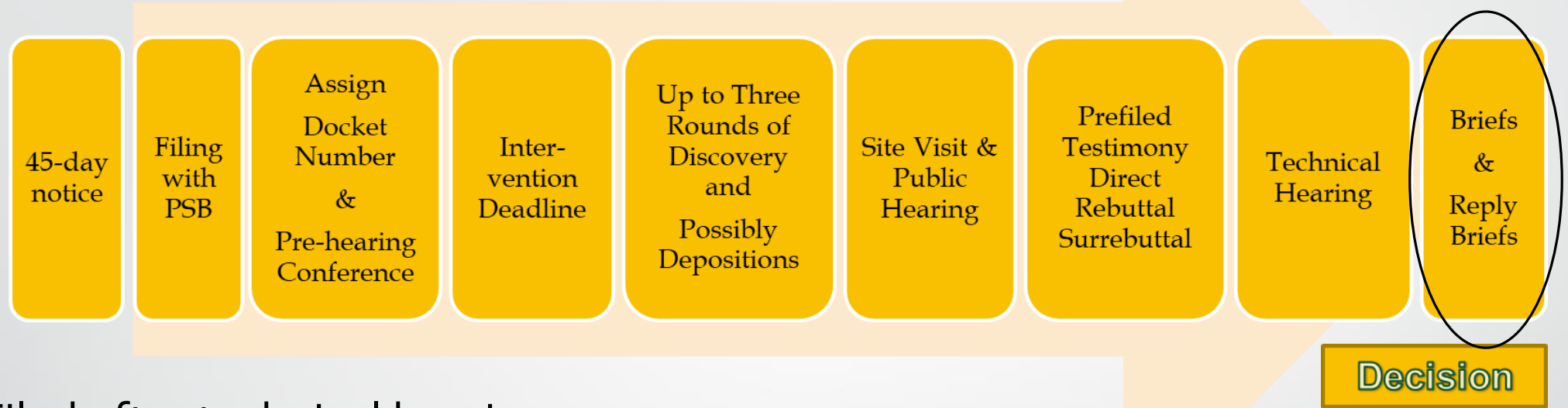
- Not part of evidentiary record; but public can make comments!
- Any time between intervention and technical hearing.
- Discussion:
 - How will this impact existing conditions? Alternative locations?



- Used by parties to ask questions re: testimony and exhibits.
- Strict rules, multiple steps in process.
- Municipality chooses to focus on
 - (b)(1) Orderly Development of the Region
 - (b)(5) Act 250 criteria 1-8 and 9(K)



- Like a trial, but all testimony is pre-filed.
- No new testimony unless authorized.
- Large facility so: hearing before whole board of PUC and Staff.
- PUC may ask questions not raised in pre-filed testimony.



- Filed after technical hearing
- Two rounds: Initial, and reply.
- Opportunity to cite facts (from record and statute), rules, regulations, precedent, and explain position. No new evidence.

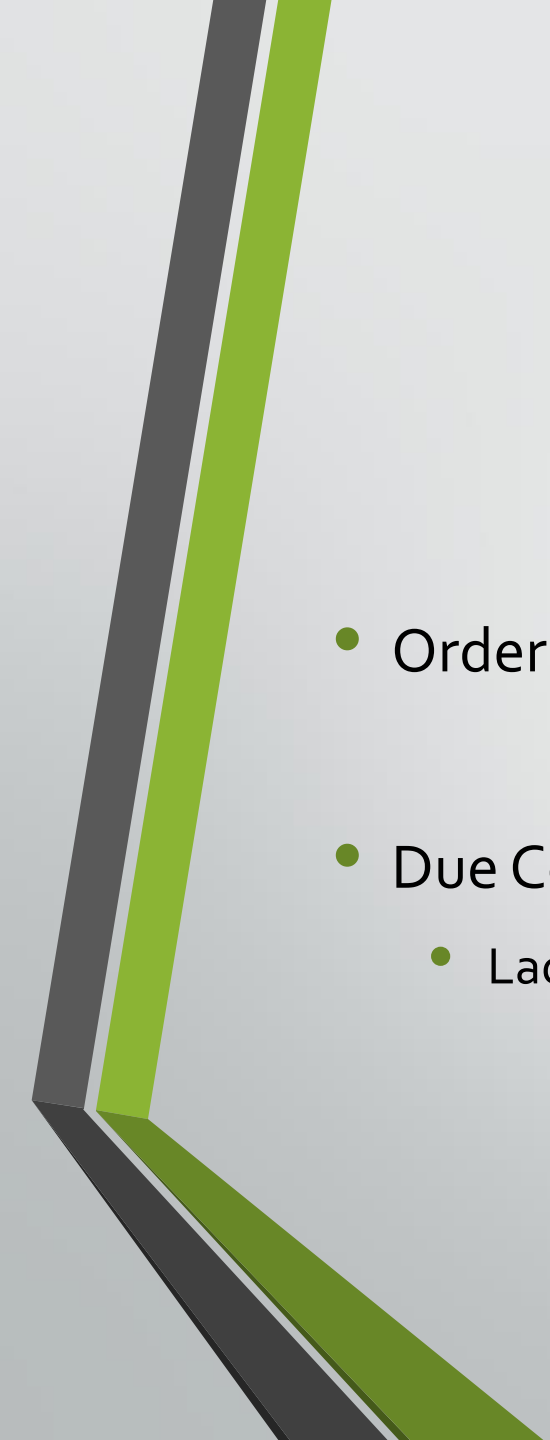


- Based on evidentiary record.
- Include findings of fact from 248, and conclusions of law.
- Appeal? VT Supreme Court.



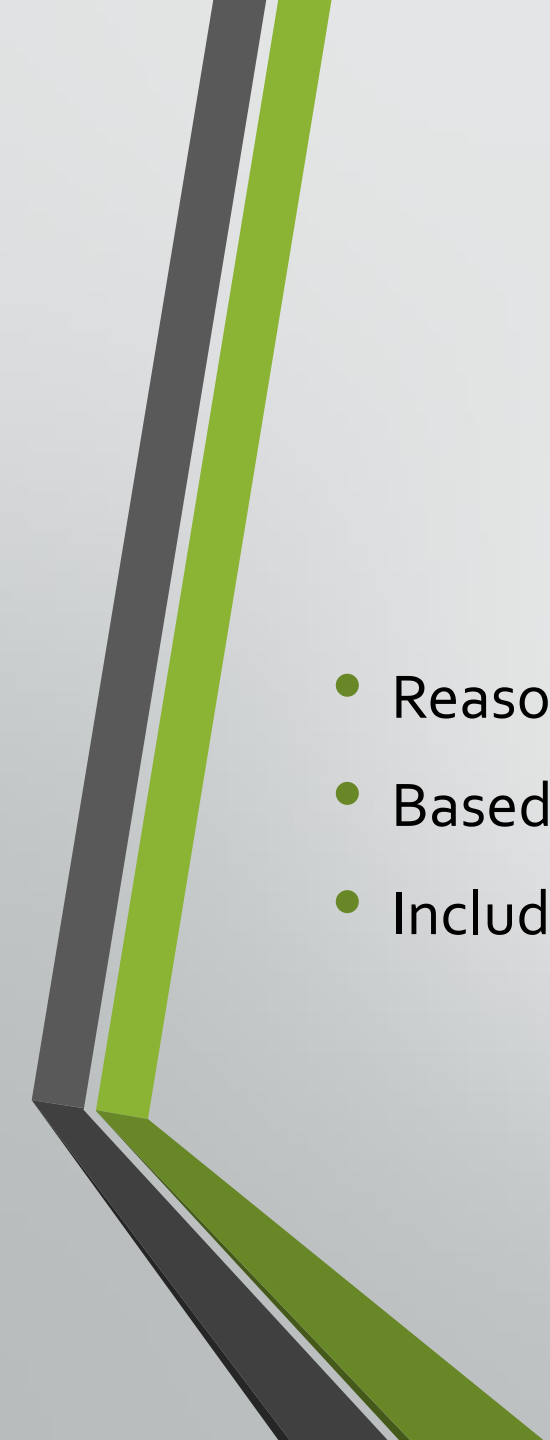
Criteria

- Criterion 248(b)(1) Orderly Development
 - “Land conservation measures”
 - “Regional” impacts
- Criterion 248(b)(5) Natural Resources, Aesthetics, Historic Sites
- Other Criteria



Effective Energy Plans

- Orderly Development of the Region (or undue interference)
- Due Consideration and Substantial Deference
 - Lack of Case Law



Effective Energy Plans

- Reasonable recommendations
- Based on well-established and specific planning goals
- Include Land Conservation Measures and Specific Policies

Questions?

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