

Planning for the Future

Naperville Electric Utility



Tonight's Purpose:

- Answer follow up questions from the April 7 Council meeting
- **Review Option #1 – Joint Action Agency Participation**
- Summarize option #1 with our approved components of evaluation for energy procurement in the future

Naperville Greenhouse Gas Emissions

What is Naperville's greenhouse gas emission from energy today?

- **Physical or Location Based Energy**
 - Naperville receives energy from the market in real-time, PJM and physics control where the energy comes from every hour of the day.
- **Financial or Market Based Energy**
 - Energy can be hedged and delivered to other areas. Financial energy hedges physical energy and it's sold in the market real-time to offset real-time price spikes.

Key Takeaway: Naperville's physical energy mix is determined by the generation assets closest to Naperville and who we buy that energy from does not impact emissions today or in the future.

Greenhouse Gas Emissions Location/Physical Energy

- **Emissions and Generation Resource Integrated Database (eGRID):**

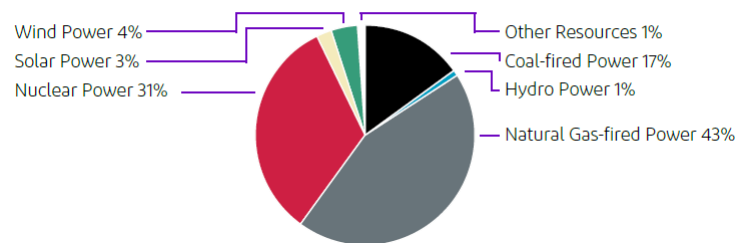
- RFCW Region – 1052.65 lbs. CO2/MWh
 - Naperville GHG Report 2025

- **Pennsylvania Jersey Maryland (PJM):**

- PJM Region – 1037.23 lbs. CO2/MWh
 - Naperville GHG Report 2025

- **ComEd Environmental Disclosure:**

Sources of Electricity for the 12 months ending December 31, 2025



Plant Name	Type	Capacity (MW)	Location (Miles from Naperville)
Kendall County Generation Facility	Natural Gas	1,256	15
Lincoln Generating Facility	Natural Gas	624	20
Elwood Energy Center	Natural Gas	1,350	20
Dresden Generating Station	Nuclear	1,845	25
Braidwood Generating Station	Nuclear	2,389	30

Key Takeaway: Several sources estimate the emissions of power generation; however, location of generation assets dictate the energy mix received by Naperville every hour of every day.

Greenhouse Gas Emissions

Market/Financial Based Energy

- **Illinois Power Agency Contracted (Spring 2025):**
 - **Expected Fuel Mix**
 - **PJM Mix (Subject to Market Conditions)**
 - **Actual Fuel Mix**
 - **“The actual fuel mix for energy supplied may differ from expected fuel mix.”**
- **Illinois Municipal Electric Agency:**
 - **2022 – 1702.64 lbs. CO2/MWh**
 - **Naperville GHG Report 2025**
 - **2025 – 1549 lbs. CO2/MWh**
 - **Computed based on IMEA FY 2025 Energy Production**
 - **Will be reduced with Bee Hollow in 2027**
 - **Final Percentages Dependent on Asset Performance**

Key Takeaway: Market based greenhouse gas emissions are determined by who we buy power from and the retirement of renewable energy certificates.

Greenhouse Gas Emission Comparison Communities

	Oak Park, IL (ComEd)	Evanston, IL (ComEd)	Batavia, IL (Municipality)	Aurora, IL (ComEd)	Naperville, IL (Municipality)
Physical Energy Source	PJM	PJM	PJM	PJM	PJM
Financial Energy Source	Municipal Aggregation – MC Squared	Municipal Aggregation – MC Squared	NIMPA/Market	Municipal Aggregation – MC Squared	IMEA
REC Purchases	No	Yes	No	No	Directly – No IMEA – Matches Renewable Generation
Claimed % Renewable (By REC Retirement)	Not Reported	26.6%	2%	Not Reported	14% - 2025 19% - 2027

Greenhouse Gas Emissions

How Can We Reduce Green House Gas Emissions?

Physical or Location Based Energy

- **Increase Residential, Commercial and/or City Owned Renewables**
 - ~.5% of All Energy Used in Naperville is generated in Naperville
 - RECs Retired by Customers/Sold to State can not be Claimed

Financial or Market Based Energy

- **Green Energy Certificate Program – Launched in 2025**
 - Available to all Residential and Commercial Customers
- **Purchase Renewable Energy Certificates / Emission-Free Energy Certificates (EFECs)**
 - Financially Supports Renewable/Zero Carbon Energy Sources
 - Available to Offset Citywide Energy Consumption

Greenhouse Gas Emissions

Questions?

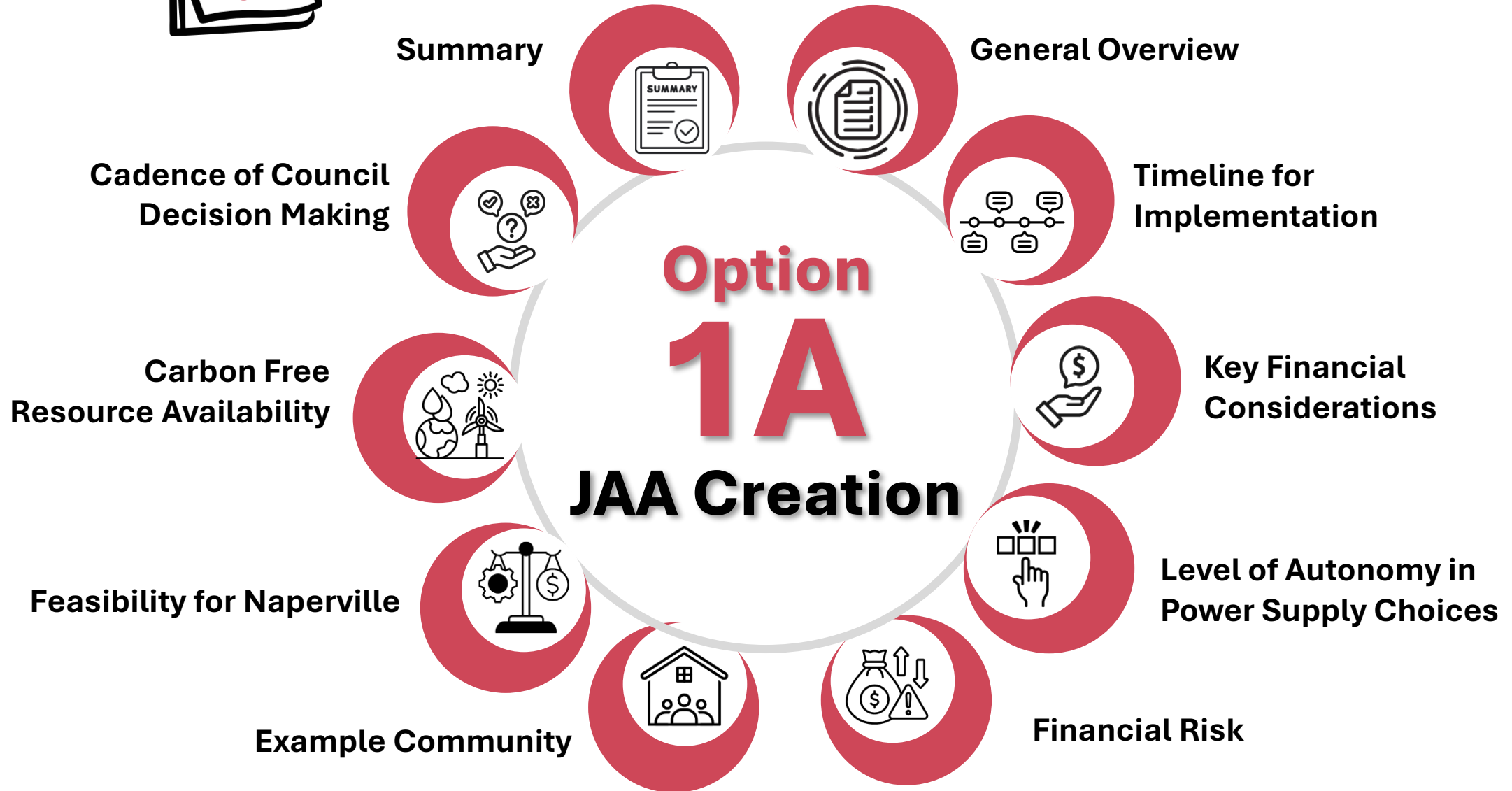


Joint Action Agency Participation



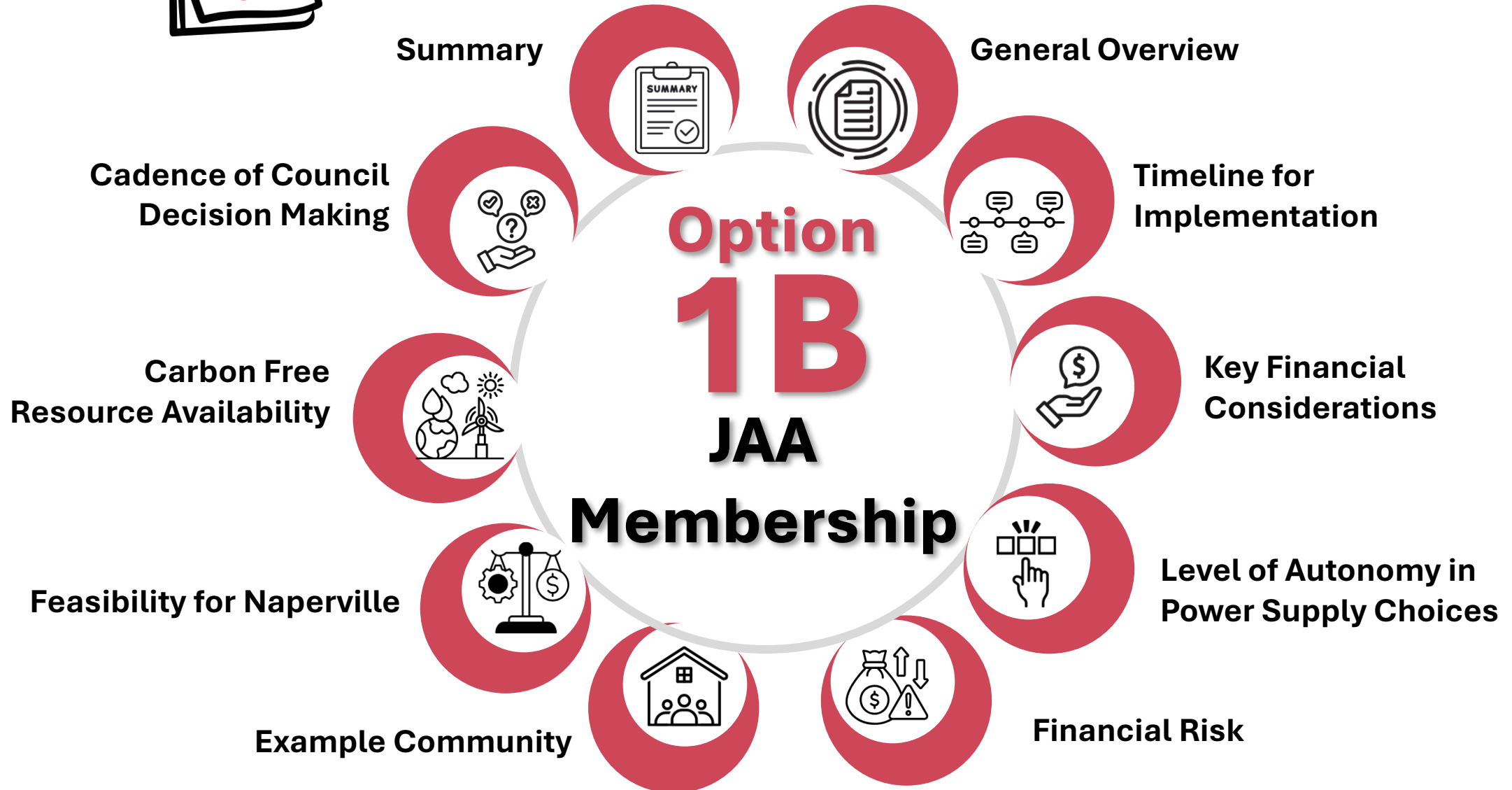


Joint Action Agency Participation





Joint Action Agency Participation



What is a Joint Action Agency?

General Overview

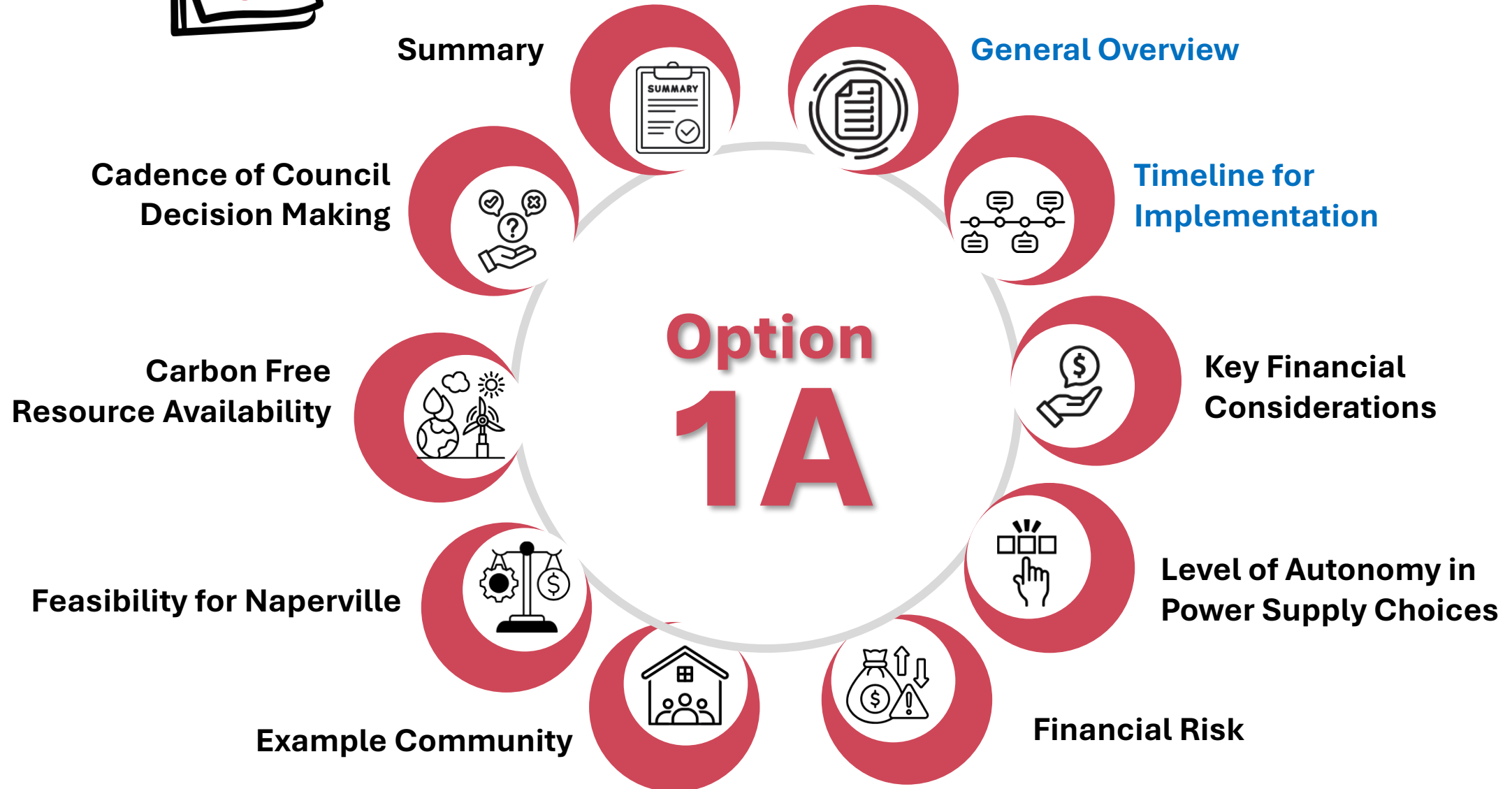
Not-for-profit agency created to pool resources and provide shared financing to participate in larger power generation projects

- **Helps achieve economies of scale for smaller utilities**
- **Shared staff resources - legal services and managing regulatory compliance**
- **Governed by and for their members**
- **Resource planning activities**





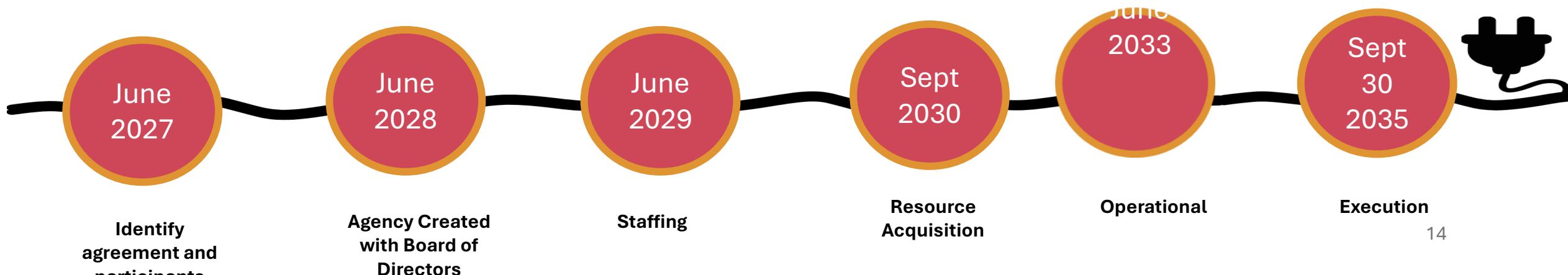
Joint Action Agency Participation



Option 1A - Creation of our own Joint Action Agency

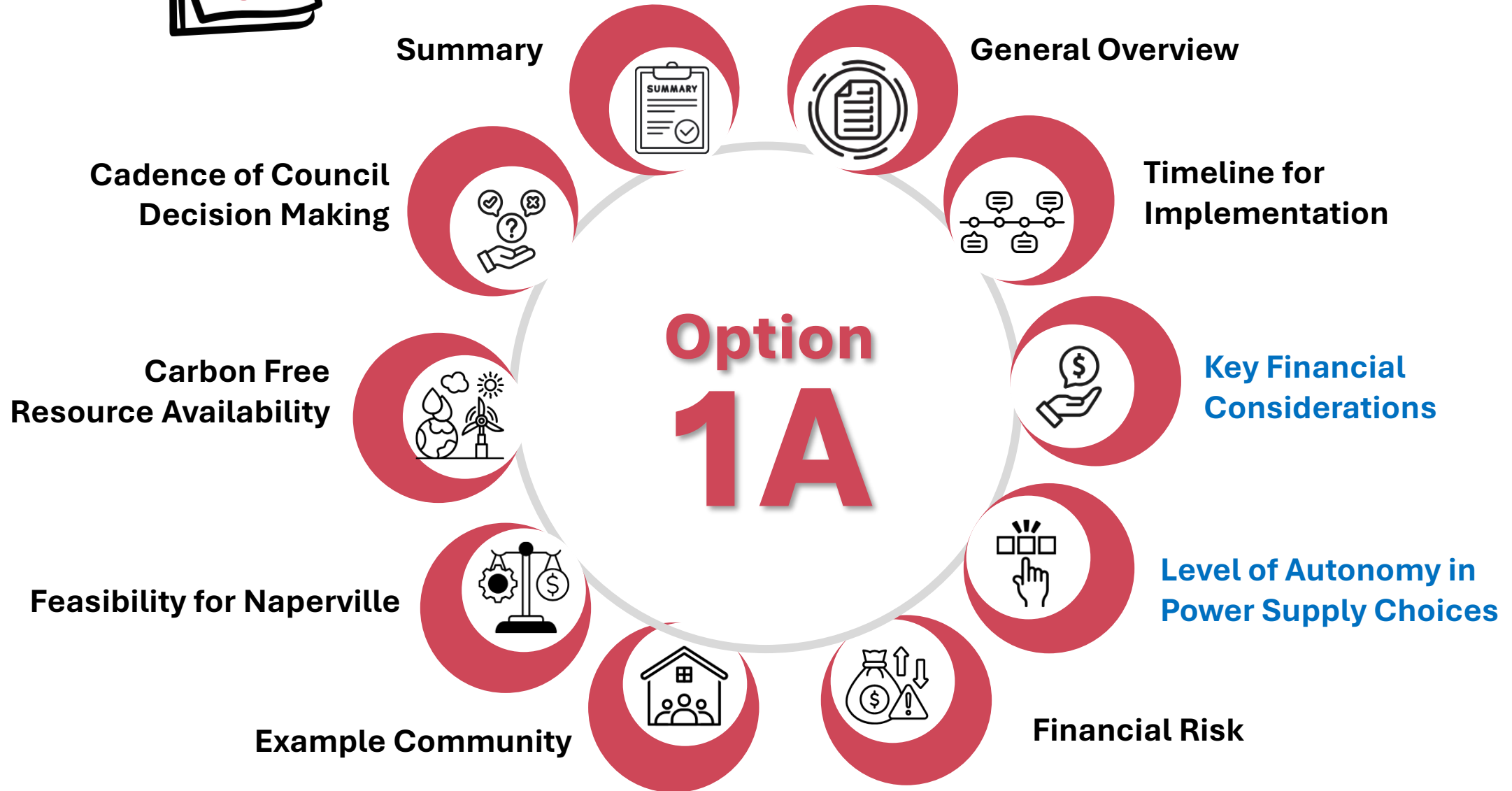
General Overview and Timeline for Implementation:

- Identify other municipalities with common goals
- Begin drafting agency agreements and bylaws
- Hire 33 staff members and begin resource acquisition and market operations
 - Compliance, Market Operations, Finance, Technical and Legal





Joint Action Agency Participation



Option #1A – Creation of our own Joint Action Agency

Key Financial Considerations

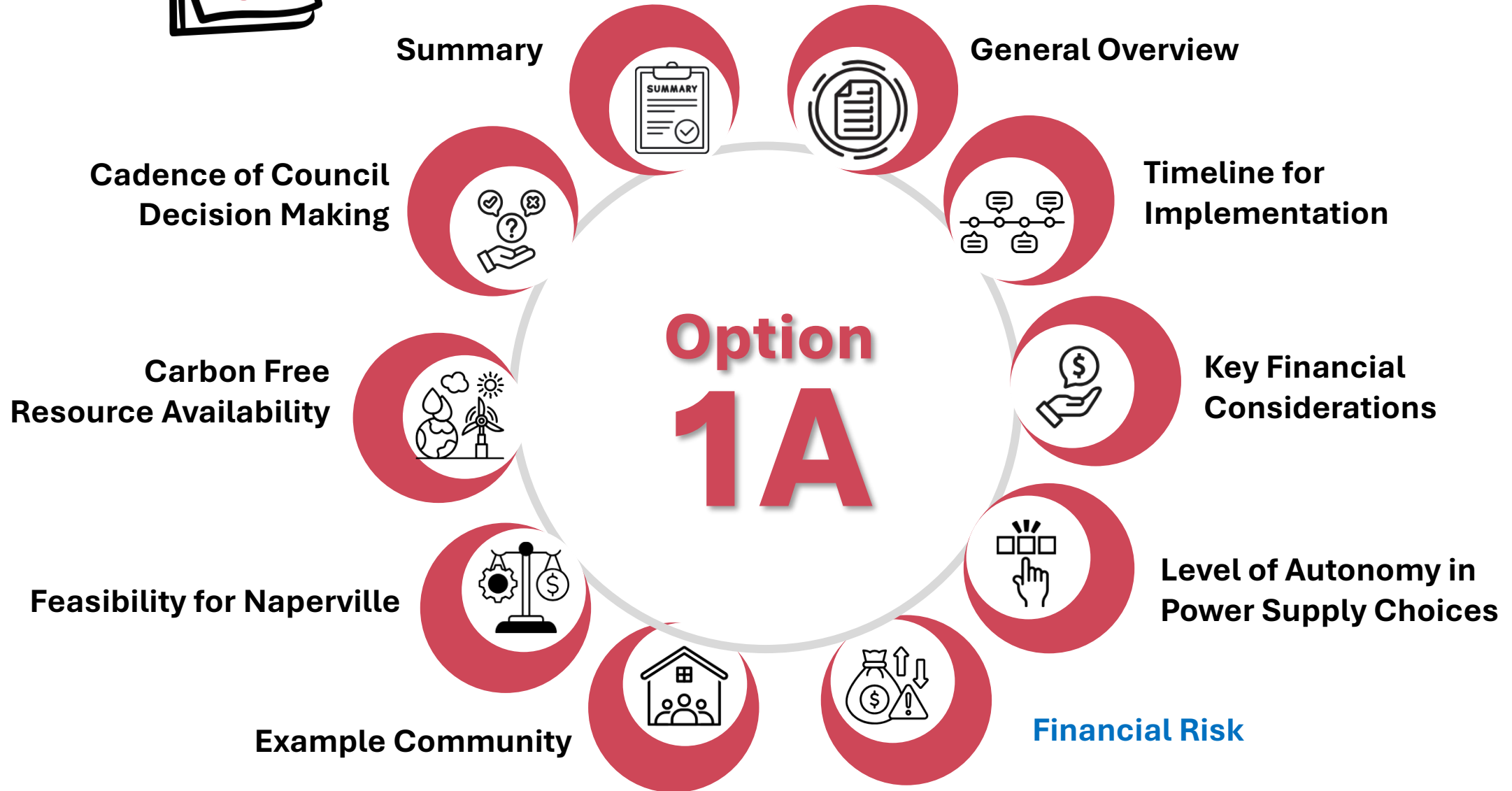
- **Asset ownership will require buy-in or bonding**
- **Cash and other collateral requirements for PJM membership**
- **Unknown/unexpected costs and administrative and general expenses**

Level of Autonomy

- **Voting rights dependent upon bylaws and other member's requirements**
- **Possibilities are limitless but subject to requirements of other members**



Joint Action Agency Participation



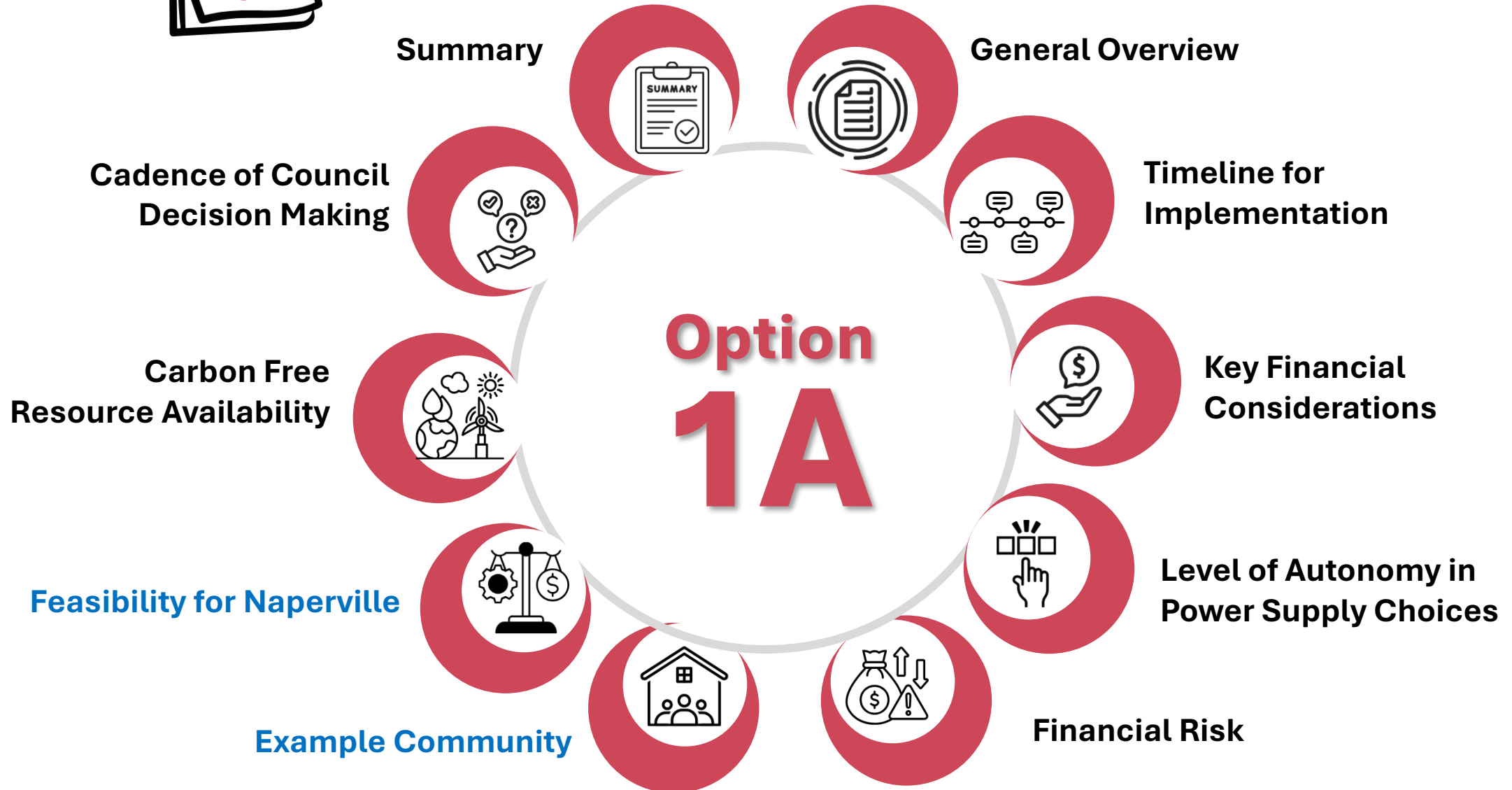
Option #1A – Creation of our own Joint Action Agency

Financial Risk

- **Newly created entity without financial or performance track record**
- **Contracted asset performance not as expected (Market Exposure)**
- **Dependent on agency load and overall membership**



Joint Action Agency Participation



Option #1A – Creation of our own Joint Action Agency

Example Communities

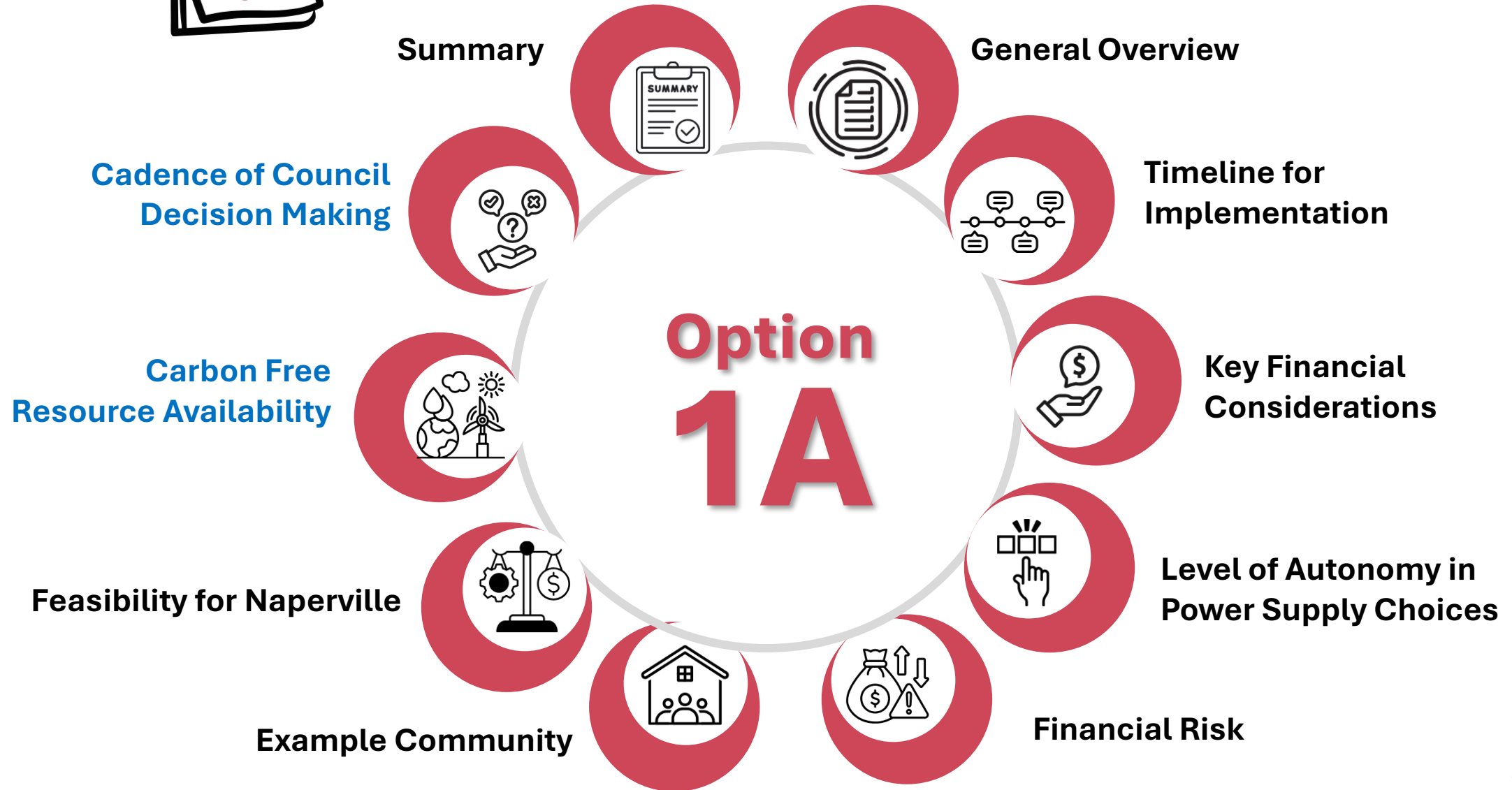
- **Northern Illinois Municipal Power Agency (NIMPA)**
 - **Batavia, Illinois**
 - **Geneva, Illinois**
 - **Rochelle, Illinois**

Feasibility for Naperville

- **Success depends on finding public power communities with shared values in PJM willing and able to exit existing contracts/supplier who will agree to terms and conditions with Naperville that likely has a larger load and will likely require proportionate voting rights.**



Joint Action Agency Participation



Option #1A – Creation of our own Joint Action Agency

Carbon Free Resource Availability

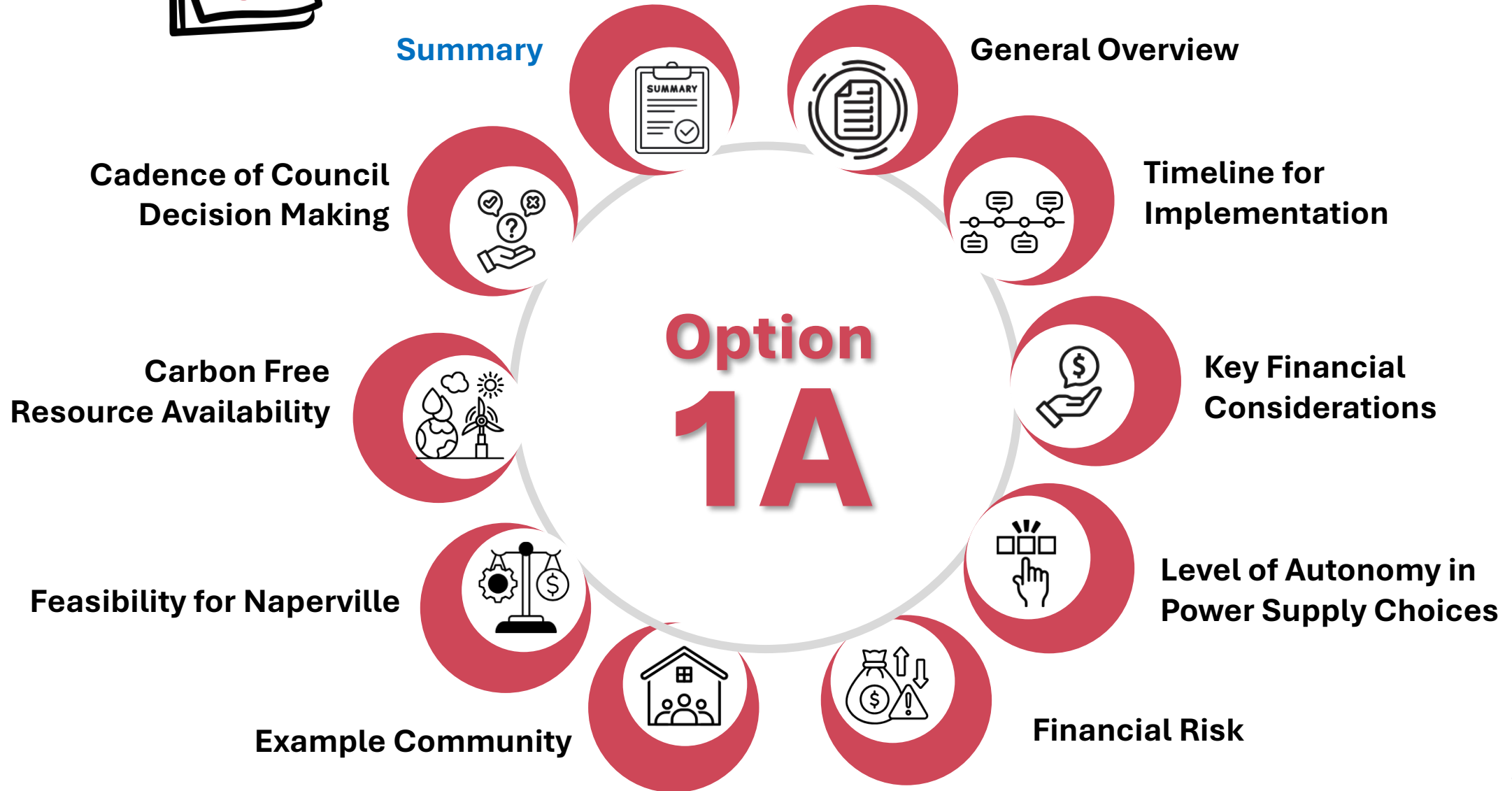
- **Subject to agency size and alignment of membership**
- **All procurement options available**

Cadence of Council Decision-Making

- **Agency Board of Directors are primary decision makers**



Joint Action Agency Participation



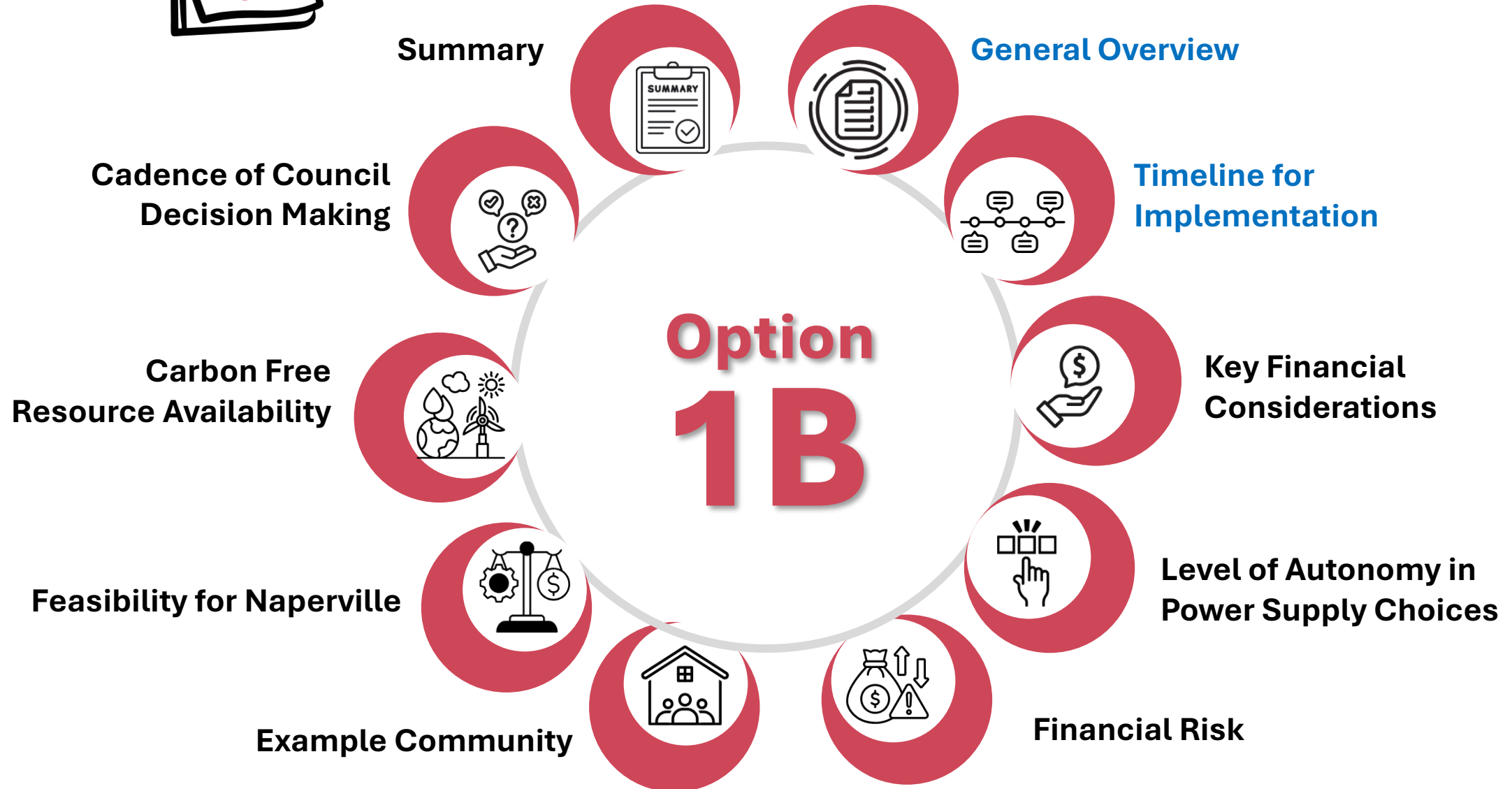
Option #1A – Creation of our own Joint Action Agency

Summary

- **Requires other municipally owned electric utilities who share similar goals to agree to agency agreements which include scope of services and voting rights.**
- **Risk of performance is significant while the ability to mitigate risk and diversify resources depends on agency size and membership.**
- **Asset ownership and/or long-term Power Purchase Agreements (PPA) will reduce or eliminate the ability for Naperville to withdraw from this newly created agency prior to asset retirement/sale and PPA expiration.**



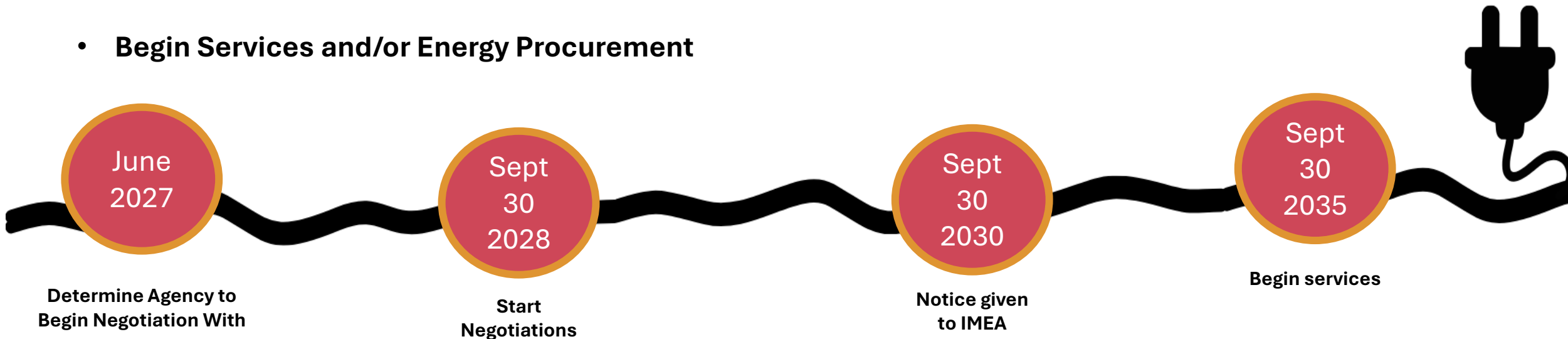
Joint Action Agency Participation



Option 1B - Participation in an existing Joint Action Agency

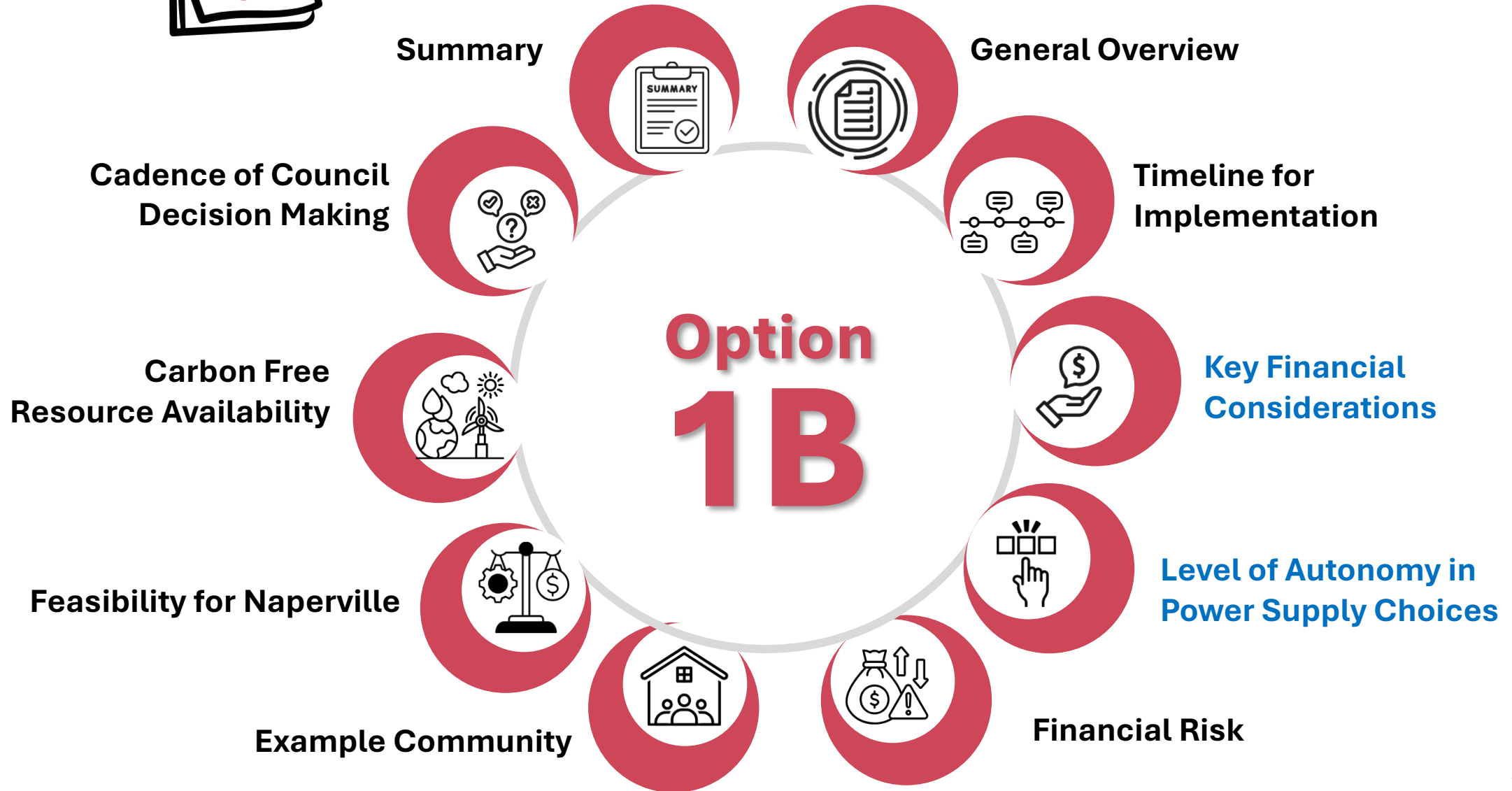
General Overview and Timeline for Implementation

- Identification of agency to begin negotiations
- Finalize negotiations including any prerequisites, premiums, and voting rights
- Begin Services and/or Energy Procurement





Joint Action Agency Participation



Option 1B - Participation in an existing Joint Action Agency

Key Financial Considerations

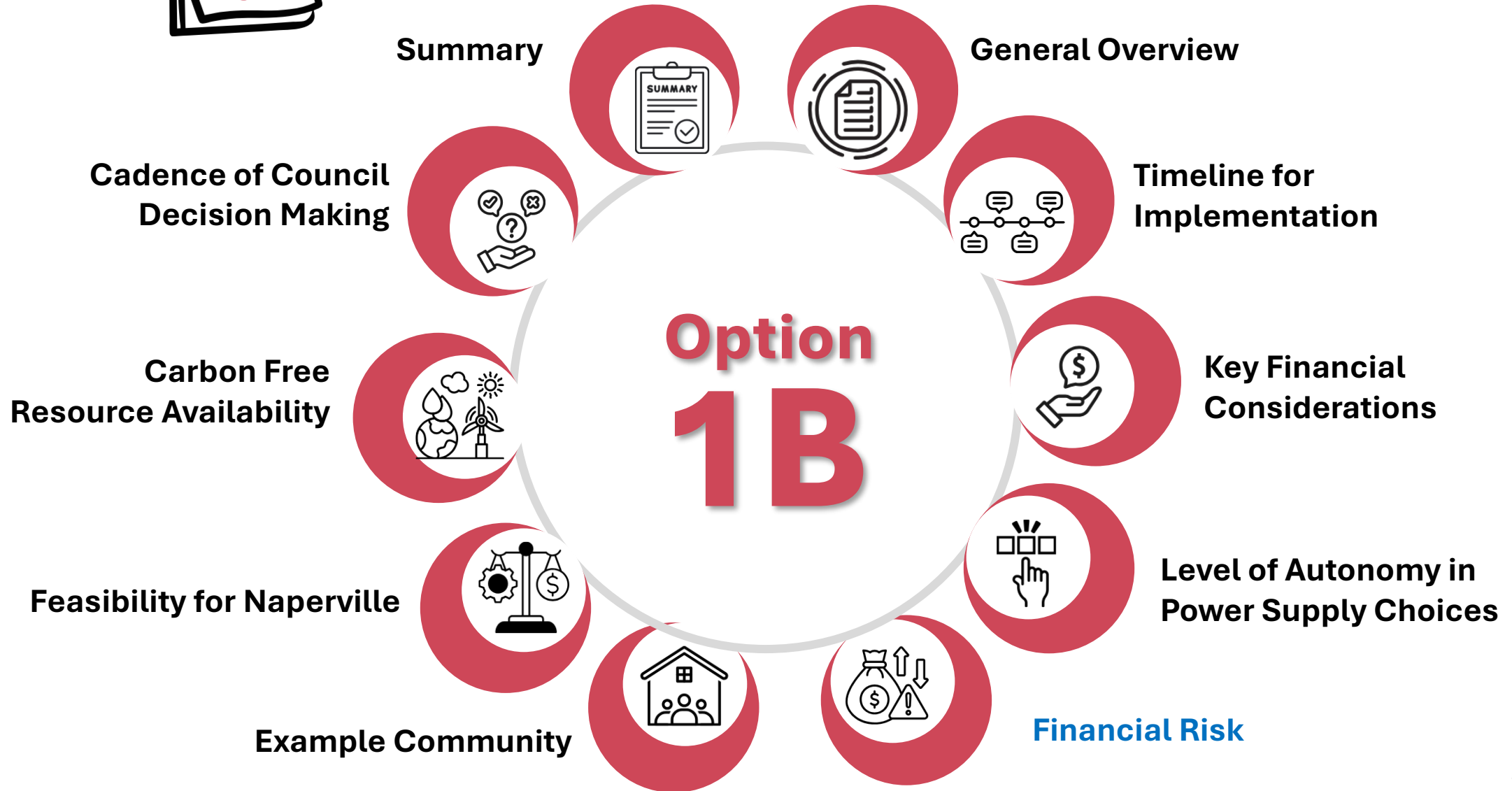
- **Potential Buy In/premium charge**
- **Financial track record of the organization is available/known**

Level of Autonomy

- **Depends on negotiated voting rights/agency agreements**
- **Full requirements and/or energy procurement rights**



Joint Action Agency Participation



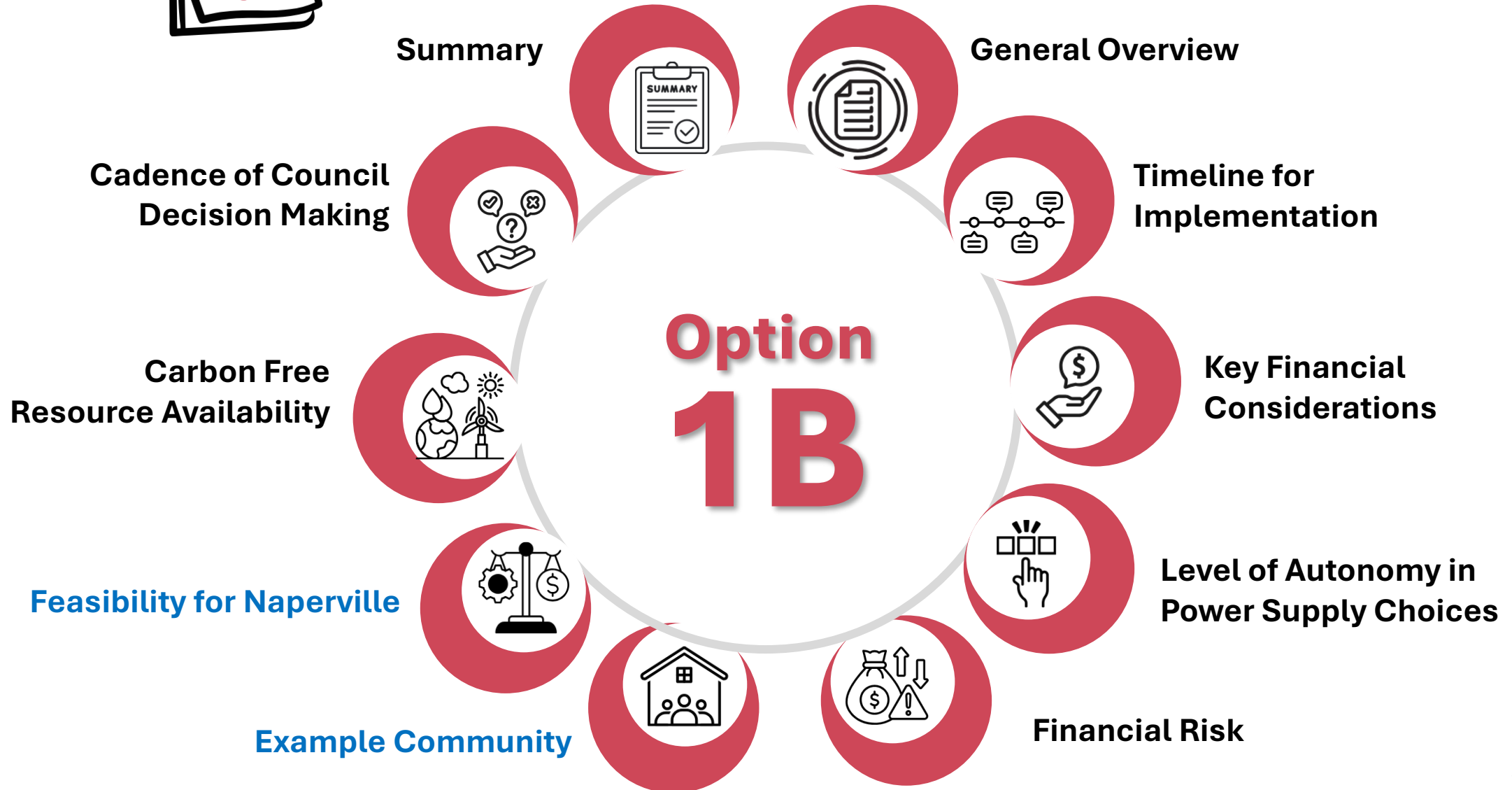
Option 1B - Participation in an existing Joint Action Agency

Financial Risk

- **Established entity with financial and market performance track record**
- **Contracted asset performance not as expected (Market Exposure)**
- **Dependent on agency load and overall membership ability to pay**



Joint Action Agency Participation



Option 1B - Participation in an existing Joint Action Agency

Example Community

- **Paducah, Kentucky (AMP)**
- **Brookings, South Dakota (Missouri River Energy Services)**

Feasibility for Naperville

- **Success depends on finding a Joint Action Agency that aligns with our values, provides the desired level of autonomy and its members find value in Naperville joining.**



Joint Action Agency Participation



Option 1B - Participation in an existing Joint Action Agency

Carbon Free Resource Availability

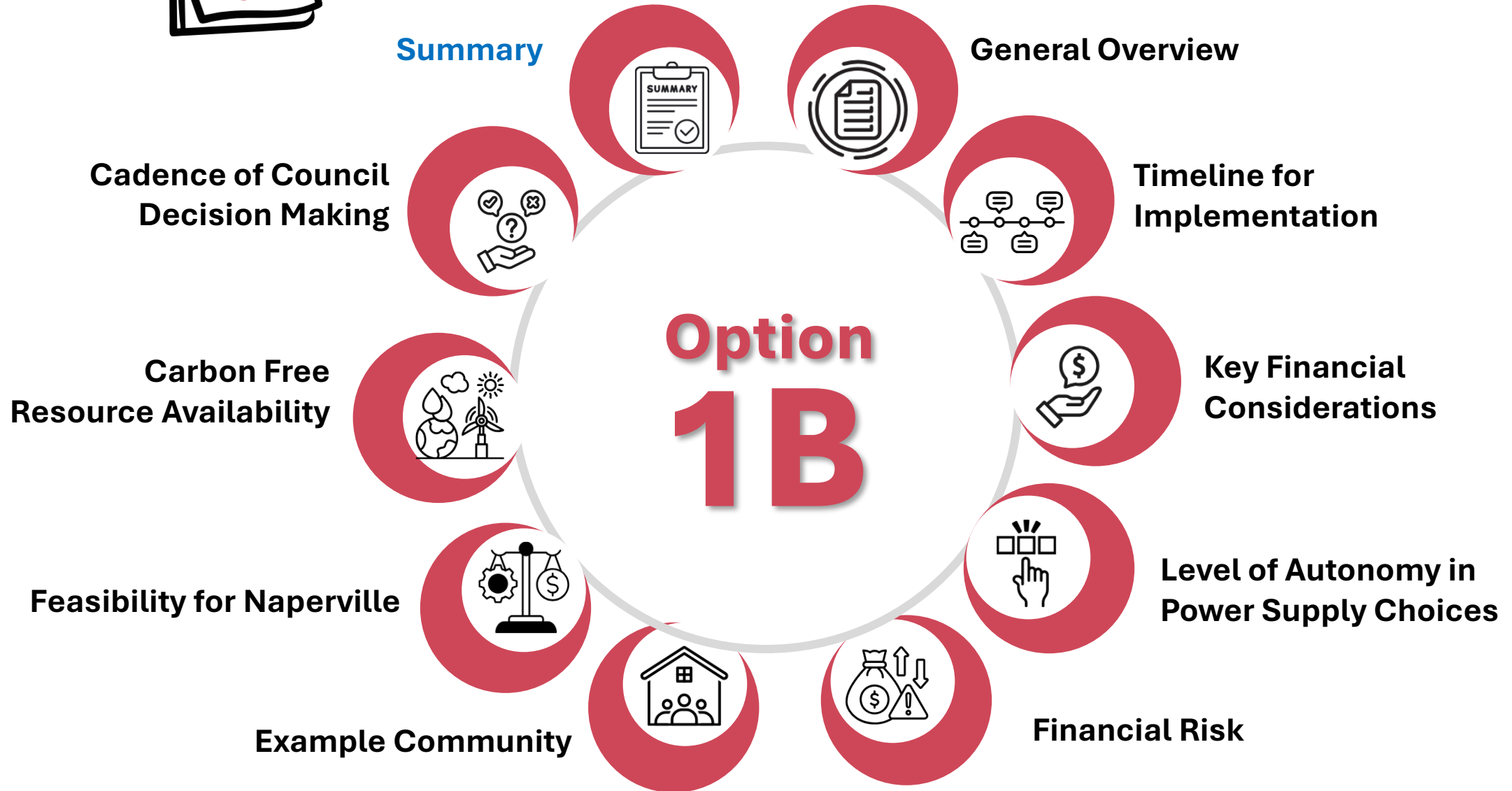
- **Largely dependent on JAA role and contract terms**
- **Agency location and member location determines level of support**
 - **PJM, MISO, etc.**

Cadence of Council Decision-Making

- **Agency Board of Directors are primary decision makers**



Joint Action Agency Participation



Option 1B - Participation in an existing Joint Action Agency

Summary

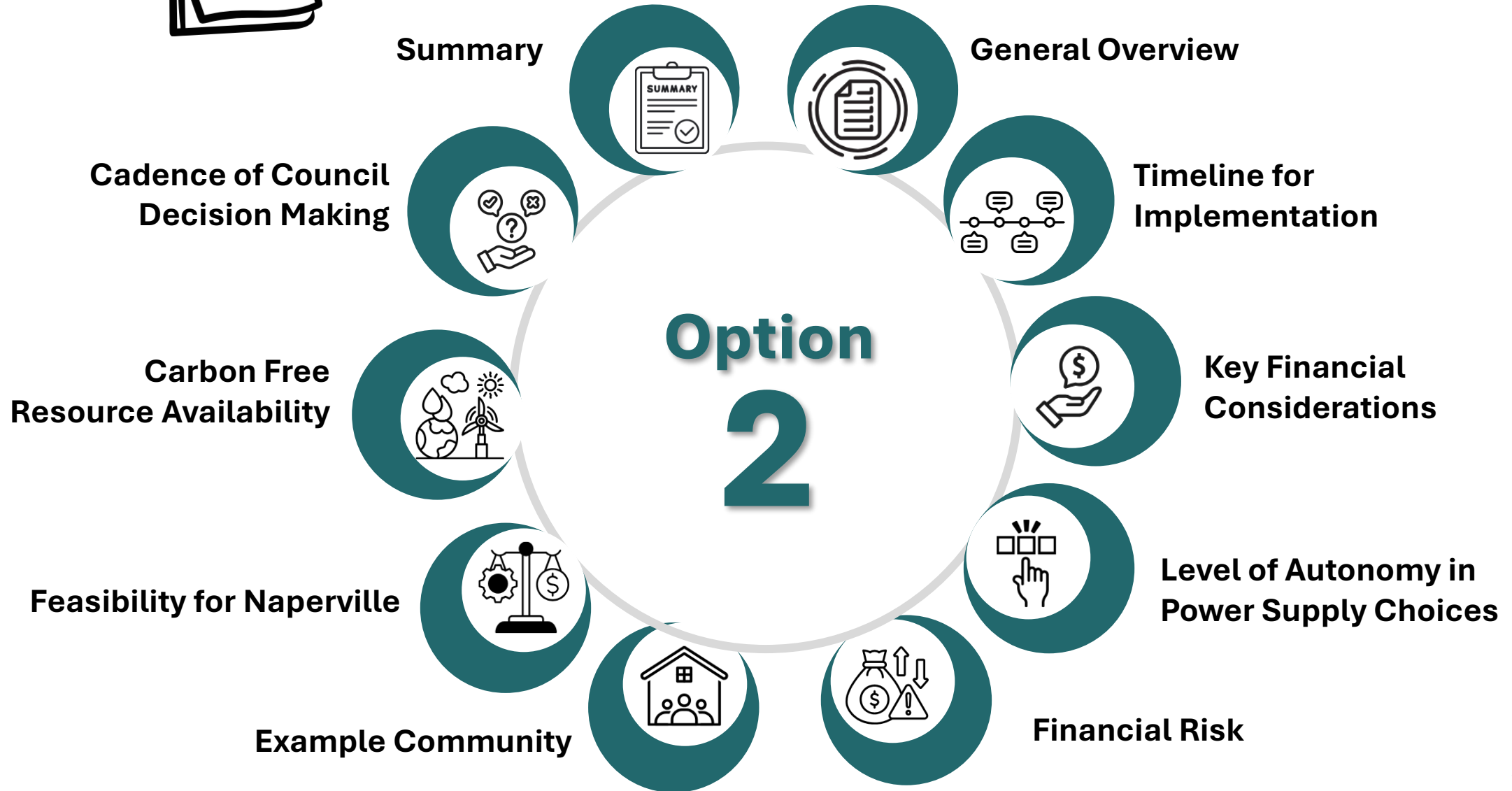
- **Joining an existing Joint Action Agency will require time to negotiate an agreement between the agency and all existing members.**
- **The level of power supply autonomy and services will need to be negotiated.**
- **While 80% of Public Power Utilities in PJM are in a JAA, the physical location matters because of state laws and physical delivery nodes.**
- **Potential Partners include MRES, AMP, and NIMPA however none have reached out looking to partner with Naperville over the past 2 years.**

Option 1B - Participation in an existing Joint Action Agency

Questions?



Market Participation with Asset Ownership



Questions?

Naperville Electric Utility

