

**Recommendations
to the
Alaska State Legislature
and the
Alaska Public Utilities Commission
Regarding a Retail Pilot Program**

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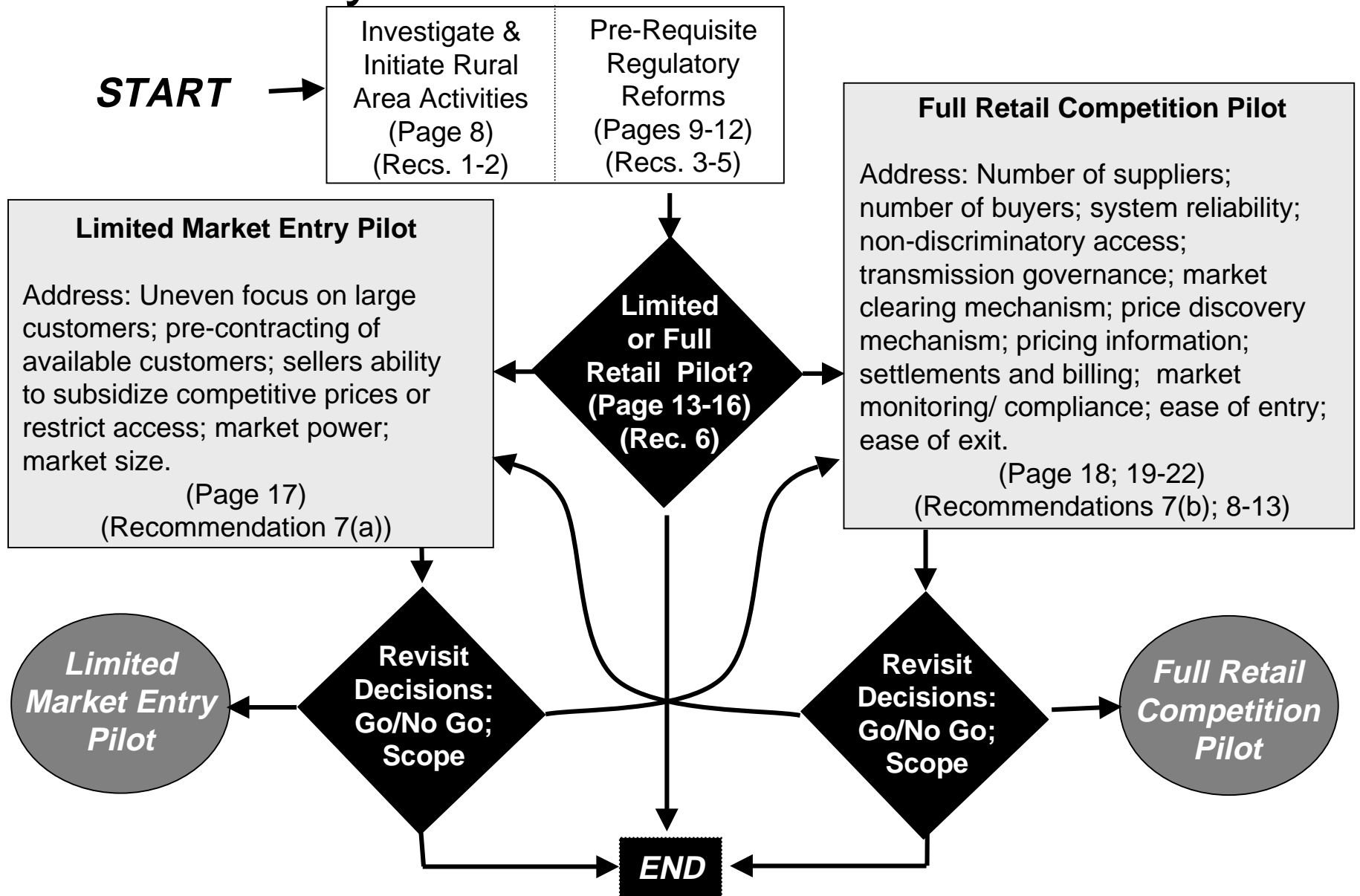
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Objective: Maximizing the Opportunities for Learning and Competition

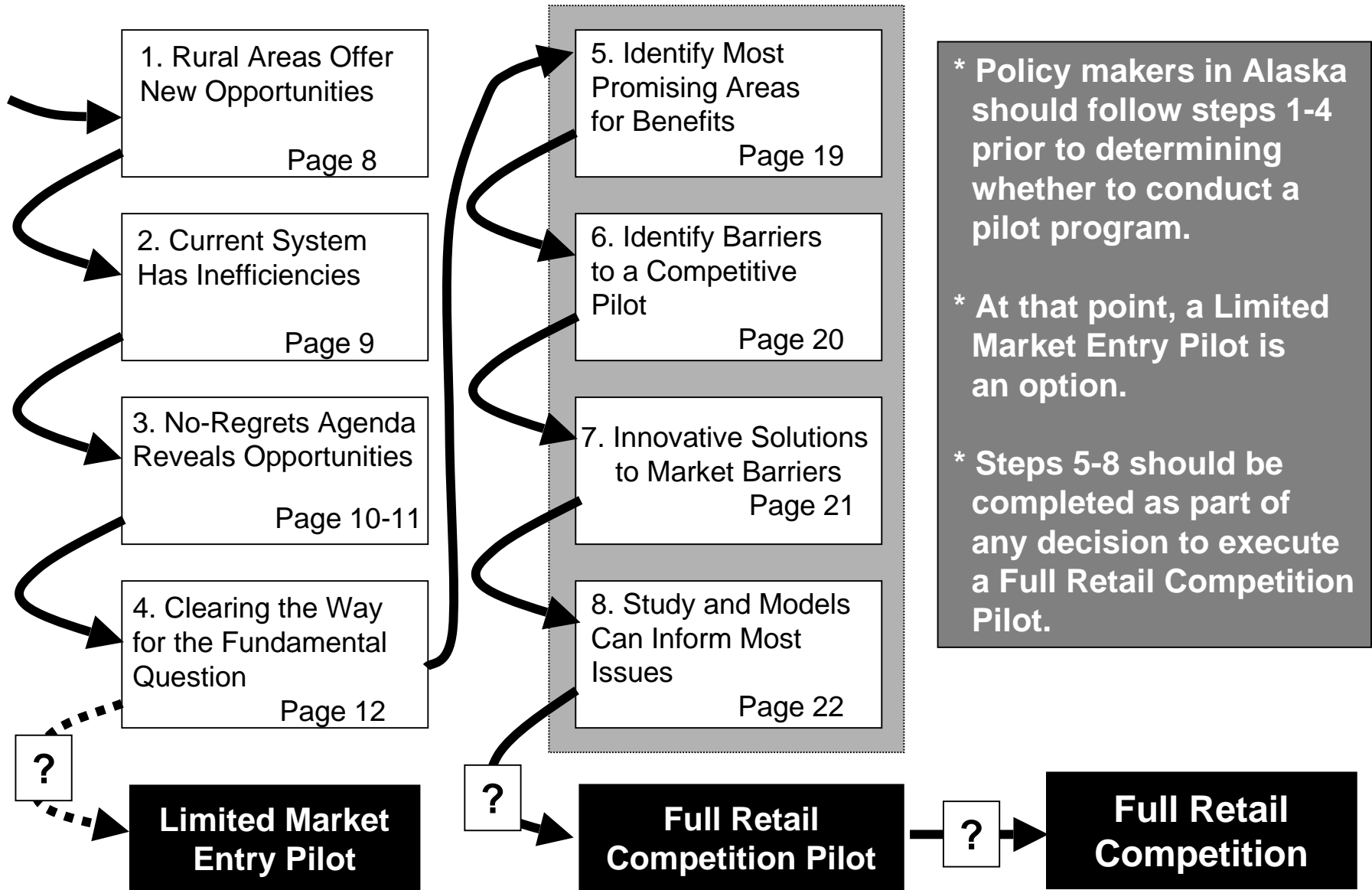
To provide recommendations to the Alaska Public Utilities Commission and the Alaska State Legislature on the scope, character, and structure of a pilot program:

- To support and inform public policy decisions regarding restructuring the electric power industry.
- To most effectively use regulatory reforms and competitive market forces to reveal and deliver cost savings to Alaska electricity customers.
- To apply the lessons learned from other jurisdictions and industries to the unique characteristics of the electricity industry in Alaska.
- To recommend two distinct, but not mutually exclusive, pathways to discover and to learn about competitive markets.

Key Decisions in the Process



Process for Informing Public Policy Decisions



Competition - What Do You Need to Know?

- What are the minimum number of sellers to ensure a liquid supply market and effectively mitigate market power and market collusion?
- What are the minimum number of buyers to ensure demand responsiveness (demand elasticity and diversity)?
- How do you structure and manage the transmission system to ensure system reliability and stability?
- How do you structure and manage the transmission and distribution system to ensure non-discriminatory access to all facilities?
- How do you structure and manage the transmission system to balance system reliability and nondiscriminatory access?
- How can you provide a robust, competitive and credible marketplace where utilities, power marketers, load aggregators, cogenerators and large customers can do business quickly and easily?
- How do you establish an electronic auction mechanism to accept supply and demand bids to determine a market clearing price for each of the 24 periods in the trading day?

Competition - What Do You Need to Know?

- How do you provide real time information to all market participants and interested parties about trading volumes and market clearing prices over the course of a trading day?
- What is the most cost effective way to coordinate scheduling and arrange delivery of power, and to provide transactions settlement and billing services to buyers and sellers?
- Who has the responsibility for monitoring the activities of market participants to detect practices or behaviors that indicate that the markets are being manipulated to the detriment of their fairness or efficiency?
- Under what circumstances will current ownership of generating resources be maintained, or required to be sold to affiliate companies or new market entrants?
- What analytic methodology should be used to calculate and allocate stranded costs?

Rural Areas Offer New Opportunities

- A policy that makes sense for ALL of Alaska must address the rural areas.
- An important objective is to improve resilience to Power Cost Equalization challenges.
- Several promising and isolated projects are currently underway, but have not appeared on the regulatory agenda.
- Recommendation 1: Continue and expand efforts to improve rural system efficiencies through aggregation of administrative, fuel-purchasing, operations, logistical and other appropriate functions among geographically separate but proximate villages.
- Recommendation 2: In order to build practical experience in the use and deployment of distributed energy systems which offer potential long-term cost savings, consider the creation of a pilot program based on technology demonstration and deployment, conducted in coordination with government and non-governmental organizations.

Current System Has Inefficiencies

- Structural inefficiencies exist in wholesale, transmission, and retail services - largely as a result of history.
- Most of this inefficiency remains because Alaska has not yet applied the market-informed learning of other jurisdictions to its electricity system.
- Aurora Power Resources, Inc.'s (Aurora) proposal demonstrates that inefficiencies are large enough to motivate a profit-making company.
- Policy Question: Are the opportunities created by current structural inefficiencies most effectively addressed through regulatory reform or by introduction of competitively motivated 3d party intermediaries.
- Recommendation 3: Permitting 3d party intermediaries to pursue economic opportunities created by structural inefficiencies does not necessarily prove the benefits of competition. Initiate a specific set of market-friendly regulatory reforms today in order to bring the real competitive opportunity into focus.

No-Regrets Agenda Reveals Competitive Opportunities

- Market thinking in other states and industries, and the October 1998 Black & Veatch Study, have revealed new tools for improving efficiency, which can be implemented through a more aggressive regulatory agenda.
- Absent positive action today, market and structural uncertainties dissuade many potential competitors.
- Regulatory reforms form a foundation for competitive regimes; by removing inefficiencies and defining market rules, they allow focus on competitive opportunities.

No-Regrets Agenda Reveals Competitive Opportunities (cont'd.)

Recommendation 4: Complete a regulatory agenda that -

- (a) calculates and allocates component costs for Railbelt utilities in a rational and uniform manner (unbundling and cost allocation);
- (b) rationalizes access to, and governance of, the transmission system to create a non-discriminatory open access network while ensuring reliability;
- (c) rationalizes oversight of generation siting and construction to minimize stranded cost exposure and to foster the emergence of a competitive wholesale market with new merchant generators; and
- (d) implements central dispatch/power pooling recommendations of the October 1998 Black & Veatch Study in the Railbelt to harvest near-term savings and to facilitate emergence of a competitive wholesale market over the longer term.

Clearing the Way for the Fundamental Question

- Regulatory reforms allow assessment of the magnitude of the residual market inefficiencies.
- Regulatory reforms reveal savings and/or other public policy goals and objectives. These, in turn, establish the economic and policy justifications for a pilot program and/or the implementation of retail competition.
- The Fundamental Question:

**Can retail competition produce savings or benefits
beyond those from improved regulation?**

- Recommendation 5: Don't ask the fundamental question until you are ready to answer it. Then, decide what kind of pilot to conduct.

Pilot Program Design - The Key Decision

- The primary value of a pilot program is to learn about and gain practical experience with selected elements of a more open and competitive industry environment.
- Careful focus on which elements to test informs both design of the pilot and criteria for performance measurement.
- By revealing what kind of competitive system is reasonably obtainable, a well-designed pilot program can inform critical public policy decisions.
- In essence, pilot program design and implementation should reflect learning objectives.
- Recommendation 6: Carefully review the elements of competitive markets and craft a pilot which demonstrates/tests the desired model of competition.

Deciding the Scope of the Pilot

	ELEMENT	CRITICAL QUESTION	IS THIS ADDRESSED IN THE PROPOSED AURORA PILOT?	IS THIS ADDRESSED IN THE PROPOSED CHUGACH PILOT?	CAN THIS BE ADDRESSED IN A MORE COMPREHENSIVE PILOT DESIGN?
1	Number of Suppliers	What are the minimum number of sellers to ensure a liquid supply market and effectively mitigate price fixing and market collusion?	No	No	Yes
2	Number of Buyers	What are the minimum number of buyers to ensure demand responsiveness (demand elasticity and diversity)?	No	No	Yes
3	System Reliability	How do you structure and manage the transmission system to ensure system reliability and stability?	No	No	Yes
4	Non-discriminatory Access	How do you structure and manage the transmission and distribution system to ensure non-discriminatory access to all facilities?	No	No	Yes
5	Transmission Governance	How do you structure and manage the transmission system to balance reliability and nondiscriminatory access?	No	No	Yes
6	Market Clearing Mechanism	How can you provide a robust, competitive and credible marketplace where utilities, power marketers, load aggregators, cogenerators and large customers can do business quickly and easily?	No	No	Yes

Deciding the Scope of the Pilot (cont'd.)

	ELEMENT	CRITICAL QUESTION	IS THIS ADDRESSED IN THE PROPOSED AURORA PILOT?	IS THIS ADDRESSED IN THE PROPOSED CHUGACH PILOT?	CAN THIS BE ADDRESSED IN A MORE COMPREHENSIVE PILOT DESIGN?
7	Price Discovery Mechanism	How do you establish an electronic auction mechanism to accept supply and demand bids to determine a market clearing price for each of the 24 periods in the trading day?	No	No	Yes
8	Pricing Information	How do you provide real time information to all market participants and interested parties about trading volumes and market clearing prices over the course of a trading day?	No	No	Yes
9	Settlements and Billing	What is the most cost effective way to coordinate scheduling and arrange delivery of power, and to provide transactions settlement and billing services to buyers and sellers?	No	No	Yes
10	Market Monitoring and Compliance	Who has the responsibility for monitoring the activities of market participants to detect practices or behaviors that indicate that the markets are being manipulated to the detriment of their fairness or efficiency?	No	No	Yes
11	Ease of Entry	Under what circumstances will current ownership of generating resources be maintained, or required to be sold to affiliate companies or new market entrants?	No	No	Yes
12	Ease of Exit	How do you calculate and allocate stranded costs?	No	No	Yes

Pilot Complexity Dictates Cost & Effort and Learning Opportunities

**Limited Market
Entry Pilot**

**Full Retail
Competition Pilot**



What You Learn:

1. Customers accept/
seek price discounts
2. Diffusion rate of
Customer Awareness
- 3 Impacts associated
with loss of customers
4. Competitive tactics

What You Learn:

1. No. of suppliers
2. No. of buyers
3. Reliability impacts
4. Openness of access
5. Trans. Governance
6. Market clearing
mechanism
7. Price discovery
mechanism
8. Information
dissemination
9. Settlements &
billing
10. Market policing
11. Ease of entry/exit,
Plus - lessons from
Limited Market
Entry pilot

Implementing a Limited Market Entry Pilot

Problem:	Recommendation 7(a):
Uneven focus on large customers	Match customer participation in proportion to current rate class percentages (by kWh)
Pre-contracting limits pool of available customers	Fresh start for all eligible customers, with cooling off period
Sellers may subsidize competitive prices from captive customers	All sellers must satisfy APUC that captive customers are held harmless
Sellers may leverage incumbency to restrict access or gain competitive advantage	APUC ensures captive customers held harmless and equal access to customer information
Exercise of market power	Require generating resources used in pilot program to be removed from ratebase
Market size too small to support competition	Increase contestible market size; change trading unit; and/or cap market shares

Implementing a Full Retail Competition Pilot

Element:	Recommendation 7(b):
Number of Suppliers	Use computer models to assess market power
Number of Buyers	Use computer models to assess demand responsiveness
System Reliability	Study transmission reliability issues and recommend operating criteria
Non-discriminatory Access	Design rules and protocols for open access
Transmission Governance	Establish governing principals and draft bylaws
Market Clearing Mechanism	Design and implement power exchange
Price Discovery Mechanism	Design software for aggregating all valid supply bids and demand bids to determine market clearing price
Pricing Information	Design internet-based real-time information system
Settlements and Billing	Design customer information and billing systems
Market Monitoring and Compliance	Establish rules and protocols to coordinate scheduling and arrange delivery of power, and settle all transactions
Ease of Entry	Study and design rules and procedures for divestiture of generating assets
Ease of Exit	Determine analytic methodology and allocation formulas for possible stranded investment

Identify Most Promising Areas for Benefits

- Experience in other industries and locations demonstrates that market benefits exceed expectations when markets are properly structured.
- Recommendation 8: Maximize potential for market success -

What?	Why?
Mitigate regulatory and structural inefficiencies	To produce near-term savings and encourage efficient market behavior
Design pilot and retail competition to encourage technology-based competition	To realize the potential for technological innovation to reduce costs
Design efficient commodity markets	To enable value-added service innovation
Exploit Alaska's small electricity systems	To lead the industry trend toward new, modular distributed energy systems
Harmonize restructuring agendas in telecommunications, natural gas, and electricity	To realize convergence benefits

Identify Barriers to a Competitive Pilot

- What are the costs associated with piloting competition?
- To what extent are the costs indifferent to the size of the pilot?
- To what extent should these cost considerations drive a decision to bypass a pilot and move directly to full retail competition?
- Recommendation 9: Any market, regardless of size and scope, must carry its own administration and oversight costs.

Innovative Solutions to Market Barriers

- Number and/or diversity of suppliers may be insufficient to prevent exercise of market power.
- Number and/or diversity of buyers may be insufficient to produce robust demand responsiveness.
- Market for electricity may be too illiquid to support secondary markets.
- Recommendation 10: Consider contract-based competition in small increments of energy, e.g., 500 kWh contracts, to increase market liquidity.
- Recommendation 11: Consider a BTU Exchange, e.g., create a market exchange where both gas and electricity are traded as BTU contracts, to increase market liquidity.

Study and Models Can Inform Most Issues

- Most structural and operational issues associated with a full retail competition pilot and competitive markets can be studied using sophisticated market simulation models.
- The goal of modeling is to determine whether viable retail competition is reasonably obtainable.
- Recommendation 12: Commission retail market simulation modeling as part of the decision to move to a full retail competition pilot.
- Recommendation 13: Full retail market opening must be preceded by modeling and simulation in any case.

Comparison of Pilot Characteristics

	Limited Market Entry Pilot	Full Retail Market Pilot
Description	Implements regulatory reforms; introduces limited market forces	Implements regulatory reforms; studies and learns about the scope, character and structure of competitive power markets in the unique context of Alaska.
Goal	Optimizes and updates the status quo; most direct path to limited customer choice	Provides the necessary information and insights to the Alaska State Legislature and the APUC to make the decision whether to implement full retail competition.
Drivers	Any retail market experience creates an opportunity to discover benefits of competitive forces in electricity markets	Retail competition pilots should be preceded by careful study, and should serve as a means to explore the contours of a more competitive electricity market.

Comparison of Pilot Characteristics (cont'd.)

	Limited Market Entry Pilot	Full Retail Market Pilot
Rural Areas	Offers new opportunities to improve rural system efficiencies; takes leadership position in development of distributed energy systems through a technology-based competitive pilot	Offers new opportunities to improve rural system efficiencies; takes leadership position in development of distributed energy systems through a technology-based competitive pilot
Biggest Risk	Exercise of market power	Lost opportunities in near-term; sufficiently liquid market for competition may not develop
Regulatory Role	Addresses and removes regulatory inefficiencies; comprehensive oversight and management for public benefit	Addresses and removes regulatory inefficiencies; reveals barriers to competitive markets; studies and designs structures and rules to ensure that markets are structured to operate efficiently and equitably
Legislative Role	Provides public policy direction; clarifies APUC jurisdiction in several important areas	Establishes public policy goals and objectives regarding electric industry restructuring; provides APUC with broader authority and jurisdiction as necessary; appropriates additional funds as required

Comparison of Pilot Characteristics (cont'd.)

	Limited Market Entry Pilot	Full Retail Market Pilot
Market Operation	Collaboration and limited competition among incumbent utilities	Functionally or structurally separated generation dispatch and transmission system operations, perhaps under new independent governing organizations
Wholesale Market	Limited number of players; competition primarily among 3rd party intermediaries	More robust and transparent; partially segmented according to new retail market demands
Retail Market	Very limited choices -- price and maybe green	Burgeoning array of novel energy products and services
New Entrants	Exclusive and traditional group; narrow play in quiet market	Broad range of companies from non-utility industries team and compete to establish novel products and services in wide open new markets

Summary of Recommendations

1. Continue and expand efforts to improve rural system efficiencies through aggregation of administrative, fuel-purchasing, operations, logistical and other appropriate functions among geographically separate but proximate villages.
2. In order to build practical experience in the use and deployment of distributed energy systems which offer potential long-term cost savings, consider the creation of a pilot program based on technology demonstration and deployment, conducted in coordination with government and non-governmental organizations.
3. Permitting 3rd party intermediaries to pursue economic opportunities created by structural inefficiencies does not necessarily prove the benefits of competition. Initiate a specific set of market-friendly regulatory reforms today in order to bring the real competitive opportunity into focus.

Summary of Recommendations (cont'd.)

4. Complete a regulatory agenda that -
 - (a) calculates and allocates component costs for Railbelt utilities in a rational and uniform manner (unbundling and cost allocation);
 - (b) rationalizes access to, and governance of, the transmission system to create a non-discriminatory open access network while ensuring reliability;
 - (c) rationalizes oversight of generation siting and construction to minimize stranded cost exposure and to foster the emergence of a competitive wholesale market with new merchant generators; and
 - (d) implements central dispatch/power pooling recommendations of the October 1998 Black & Veatch study in the Railbelt to harvest near-term savings and to facilitate emergence of a competitive wholesale market over the longer term.

Summary of Recommendations (cont'd.)

5. Don't ask the fundamental question - "Can retail competition produce savings or benefits beyond those from improved regulation?" - until you are ready to answer it. Then, decide what kind of pilot to conduct.
6. Carefully review the elements of competitive markets and craft a pilot which demonstrates/tests the desired model of competition.
7. Execute recommendations specific to implementation of (a) Limited Market Entry Pilot and/or (b) Full Retail Competition Pilot, as appropriate.

Summary of Recommendations (cont'd.)

8. Maximize potential for market success -
 - (a) Mitigate regulatory and structural inefficiencies to produce near-term savings and encourage efficient market behavior.
 - (b) Design pilot and retail competition to encourage technology- based competition and to realize the potential for technological innovation to reduce costs.
 - (c) Design efficient commodity markets to enable value-added service innovation.
 - (d) Exploit Alaska's small electricity systems to lead the industry trend toward new, modular distributed energy systems.
 - (e) Harmonize restructuring agendas in telecommunications, natural gas, and electricity to realize convergence benefits.

Summary of Recommendations (cont'd.)

9. Any market, regardless of size and scope, must carry its own administrative and oversight costs.
10. To increase market liquidity, consider contract-based competition in small increments of energy, e.g., 500 kWh contracts.
11. To increase market liquidity, consider a BTU Exchange, e.g., create a market exchange where both gas and electricity are traded as BTU contract.
12. Commission retail market simulation modeling as part of the decision to move to a full retail competition pilot.
13. Full retail market opening must be preceded by modeling and simulation in any case.

Recommended Legislative Positions - Rural

- The Alaska Legislature supports the application of innovative ideas and programs to increase the value and decrease the costs of electricity services in rural Alaska, and encourages the Alaska Public Utility Commission (APUC), working with other governmental and non-governmental organizations, to craft and conduct programs to:
 - improve rural system efficiencies through aggregation of administrative, fuel-purchasing, operations, logistical and other appropriate functions among geographically separate but proximate villages,
 - build practical experience in the use and deployment of distributed energy systems, which offer potential long-term cost savings, through a pilot program based on technology demonstration and deployment, and
 - develop and execute other appropriate pilot activities in rural Alaska.
- The Alaska Legislature finds that the APUC's current statutory authority is sufficient to conduct such activities.

Recommended Legislative Positions - Railbelt

- The Alaska Legislature supports the conduct of a retail electricity pilot program to explore the potential for improved electric services and reduced costs in a more competitive, market oriented electricity services environment.
- The Alaska Legislature finds that, while the implementation of full retail competition in the electricity sector merits the passage of specific enabling legislation, the APUC currently enjoys sufficient statutory authority to implement such a pilot program, including:
 - making provisions for streamlined registration and oversight mechanisms for pilot program participants under Alaska Statutes Title 42, Chapter 05 (including, specifically, AS §§ 42.05.141, .221, .241, and .431); and
 - imposing such other structural and administrative requirements upon pilot program participants as may be appropriate to protect the public interest and advance the purposes of the pilot program.

Recommended Legislative Positions

- Railbelt (cont'd.)

- The Alaska Legislature concludes that prior to the opening of any retail electricity pilot program, and no later than July 1, 2000, the APUC must complete a regulatory agenda that:
 - calculates and allocates component costs for Railbelt utilities in a rational and uniform manner (unbundling and cost allocation);
 - rationalizes access to, and governance of, the transmission system to create a non-discriminatory open access network while ensuring reliability;
 - rationalizes oversight of generation siting and construction to minimize stranded cost exposure and to foster the emergence of a competitive wholesale market with new merchant generators; and
 - implements central dispatch/power pooling recommendations of the October 1998 Black & Veatch study in the Railbelt to harvest near-term savings and to facilitate emergence of a competitive wholesale market over the longer term.

Recommended Legislative Positions

- Railbelt (cont'd.)

- The Alaska Legislature concludes that, prior to the opening of any retail electricity pilot program, the APUC should ensure that the design and execution of such a program addresses a full range of competitive market issues, including, but not limited to:
 - number of suppliers,
 - number of buyers,
 - system reliability,
 - non-discriminatory access,
 - transmission governance,
 - market clearing mechanism,
 - price discovery mechanism,
 - price discovery mechanism,
 - pricing information,
 - settlements and billing,
 - market monitoring/ compliance,
 - ease of entry, and
 - ease of exit.