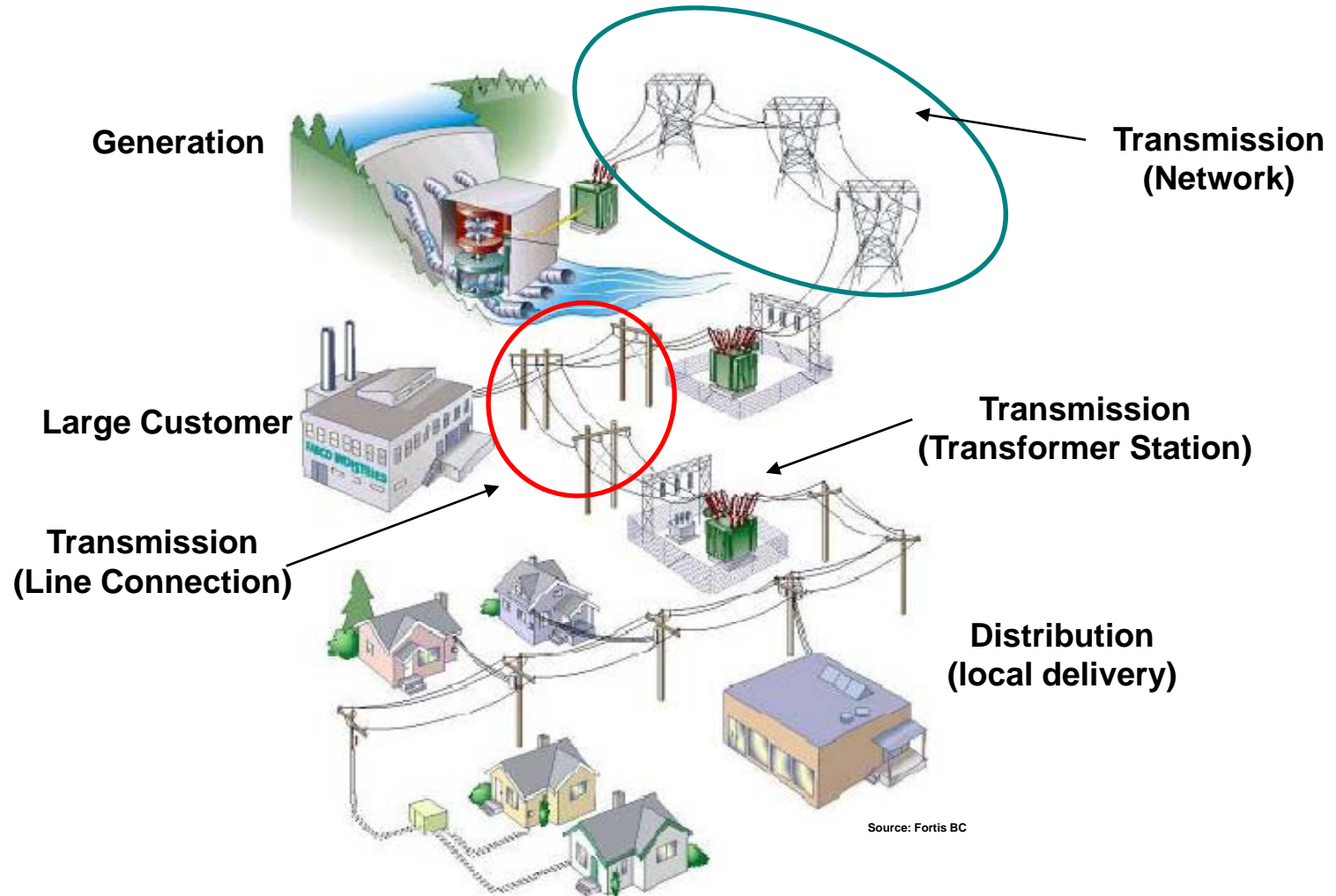
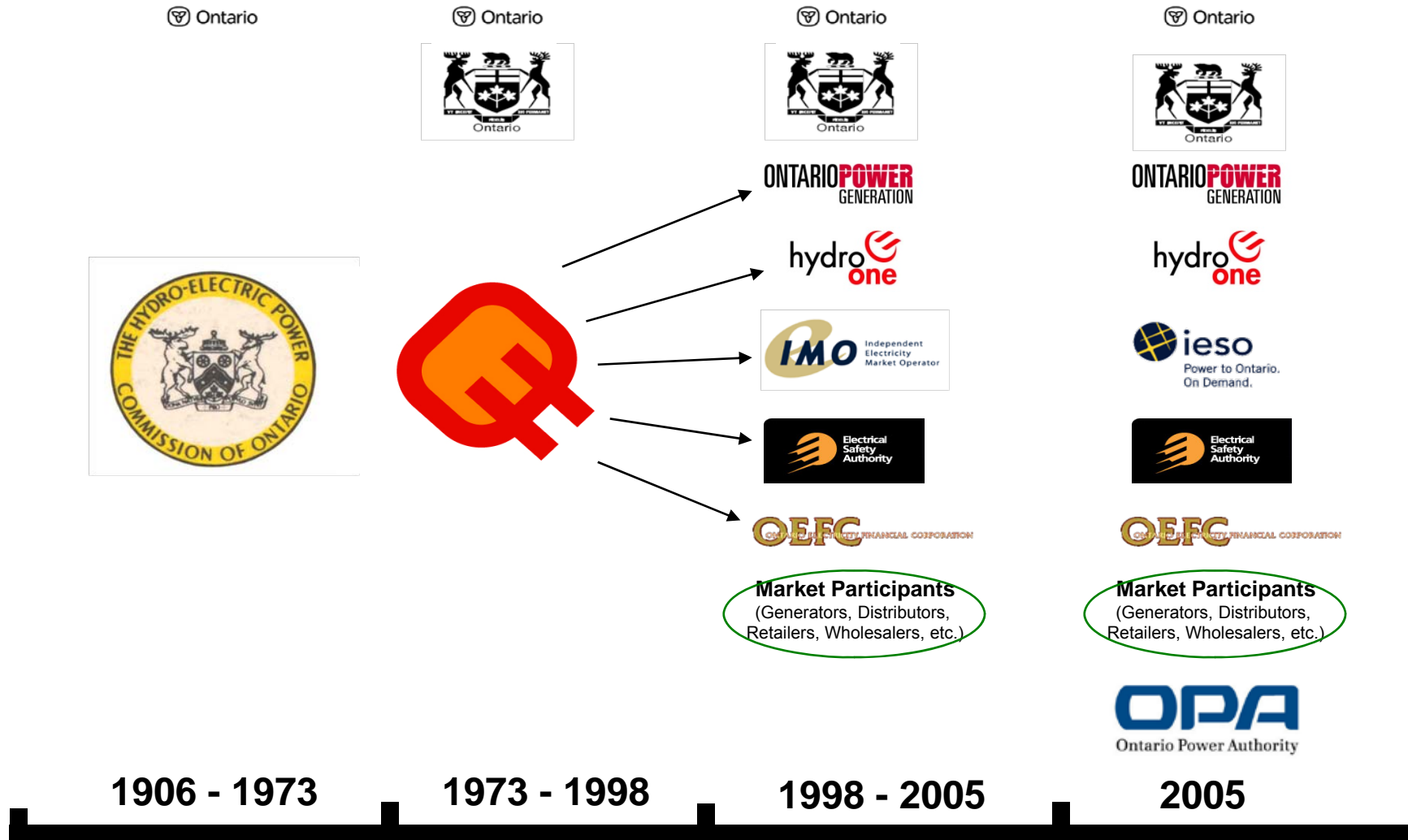


How Electricity Gets to You



How We Got Here: 1906 - Present



↑
VERTICAL INTEGRATION

(one company owns everything)

↑↑
COMPETITION

(many companies)

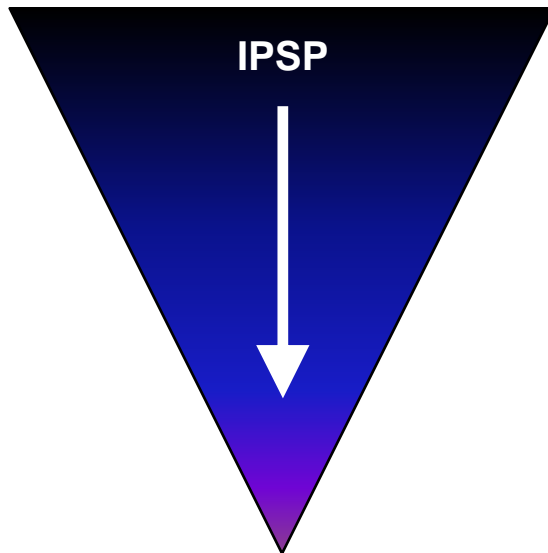
↑↑
HYBRID



Ontario Power Authority

How Planning is Done – Changing Approaches

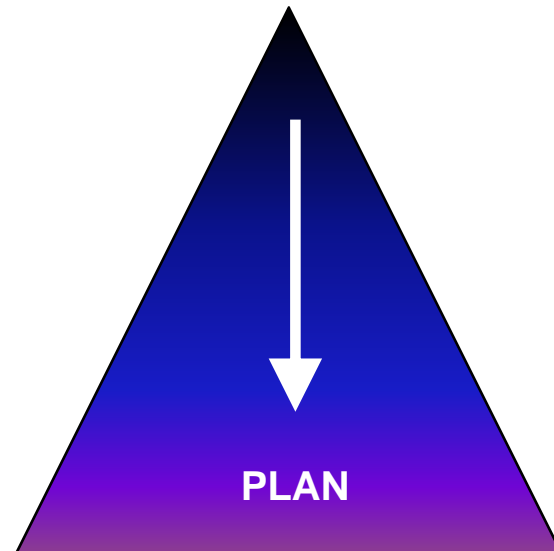
BEFORE



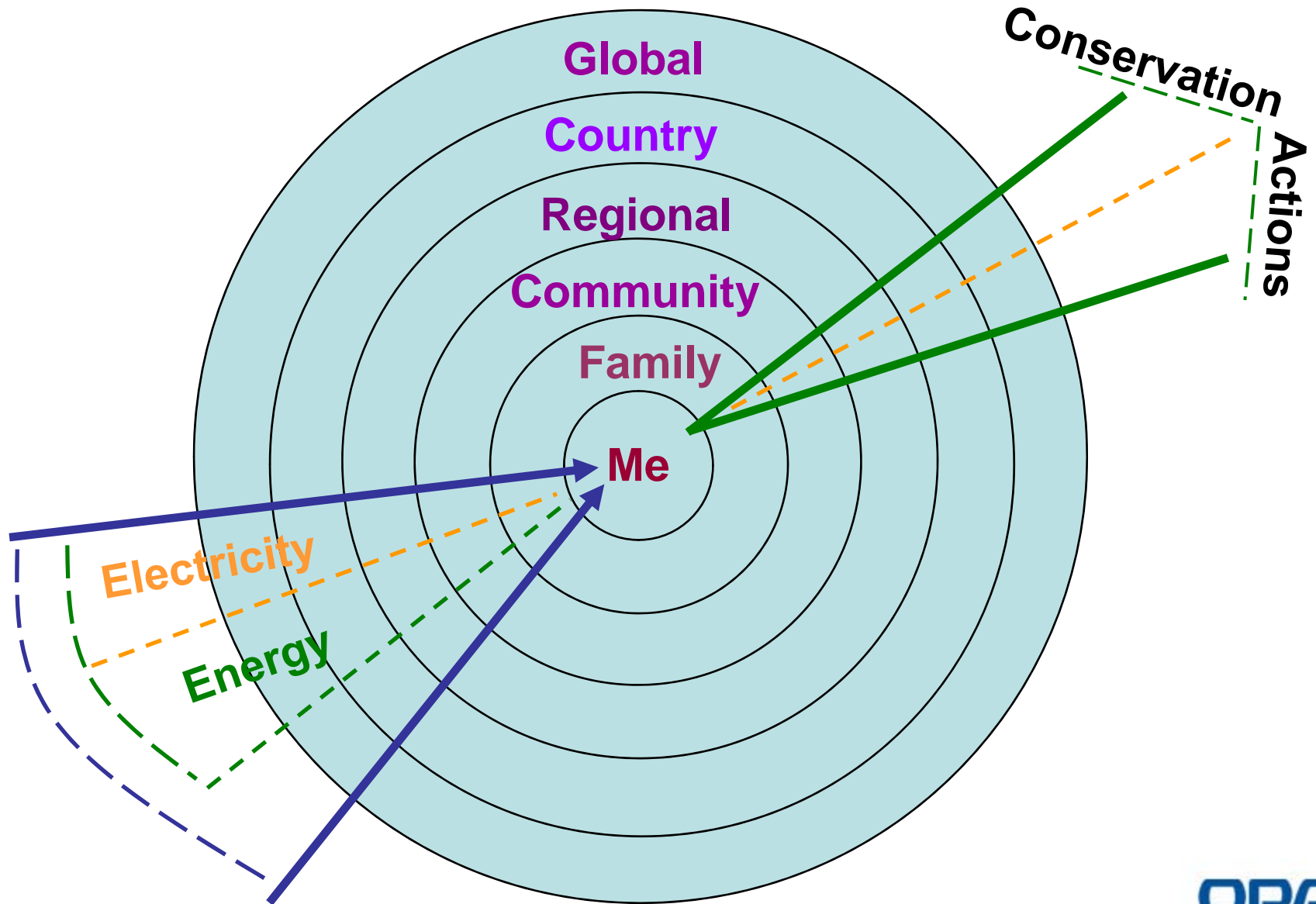
**Generation &
Transmission projects**

NOW

FIT projects

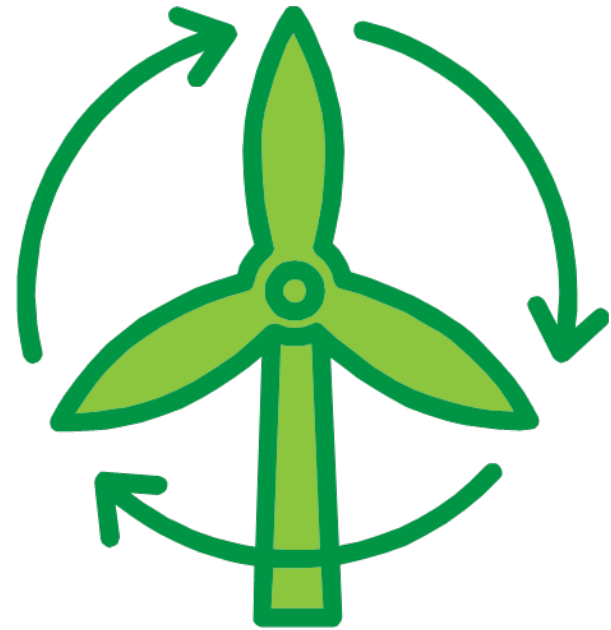


Sphere of Influence



Overview of Green Energy Act

- Outline Key Elements of New Law
- Impact of the New Law
- First Nations and Métis participation in Electricity Sector
- Feed-in Tariffs
- Smart Grid
- System Connection
- Approvals
- Other Changes



GEA Outline

- Making it happen - facilitating renewable energy development and use
- Enabling First Nations and Métis partnership and participation in electricity sector
- Supporting capacity development in First Nations and Métis communities
- Increasing conservation and culture of conservation
- Creating green jobs
- Developing “smart grid”

Impact of the New Law (cont'd)

- *Green Energy Act*
 - Replaces *Energy Conservation Leadership Act* and *Energy Efficiency Act*
 - Allows for by-law and other restrictions to be overridden for renewable projects
 - Creates Renewable Energy Facilitation Office to assist proponents through approvals processes
 - Gives Minister power to direct ministries on energy and environmental standards in government facilities

First Nations and Métis Participation in Electricity Sector

- Act to be interpreted consistent with s. 35 of Constitution Act
- Minister may direct consultation in relation to Ontario Power Authority activities
- Minister may direct OPA to facilitate aboriginal peoples' partnership and participation in development of renewable resources, transmission and distribution

Introduction to the Feed-in Tariff Program (FIT)

Proposed Feed-in Tariff Program

- Introduction to FIT Programs
 - What is a FIT Program?
 - Standardized Features of FIT Program
 - Objectives of FIT Program
 - Experienced Around the World

- Draft Program Rules
 - Eligibility and Application Requirements
 - Application Review & Acceptance
 - Connection Assessment
 - Contract Pricing
 - Contract Milestones
 - Contract Management & Settlement
 - Program Review & Amendments



Introduction to FIT Program

What is a FIT Program?

- Generators of renewable energy – from homeowners to large developers – are paid a reasonable price for the electricity they produce over the term of the contract
- Allows generators to recover expected cost of the investment plus a reasonable profit
- Can provide a predictable and stable source of revenue to reduce risks

A FIT Program provides a simple way to contract for renewable energy supply

Introduction to FIT Program

Standardized features of FIT Program

- Open to various renewable energy supply technologies
 - Wind
 - Waterpower
 - Solar Photovoltaic (PV)
 - Biomass technologies
- Different prices for different technologies and project sizes
- Long-term contracts (e.g. 20 years)
- Prices that aim to cover total project costs and provide a reasonable rate of return over the contract term
- Opportunities for promoting community-based and Aboriginal projects



FIT and microFIT

- The FIT Program is divided into two streams – FIT and microFIT

FIT Program Stream	microFIT Program Stream
Small, medium and large renewable energy projects. Generating over 10 kW of electricity.	Very small renewable projects such as home or a small business installations. Generating 10 kW or less.

- The microFIT program is highly simplified and the contract issuance process is different from the FIT program

Draft FIT Program Rules

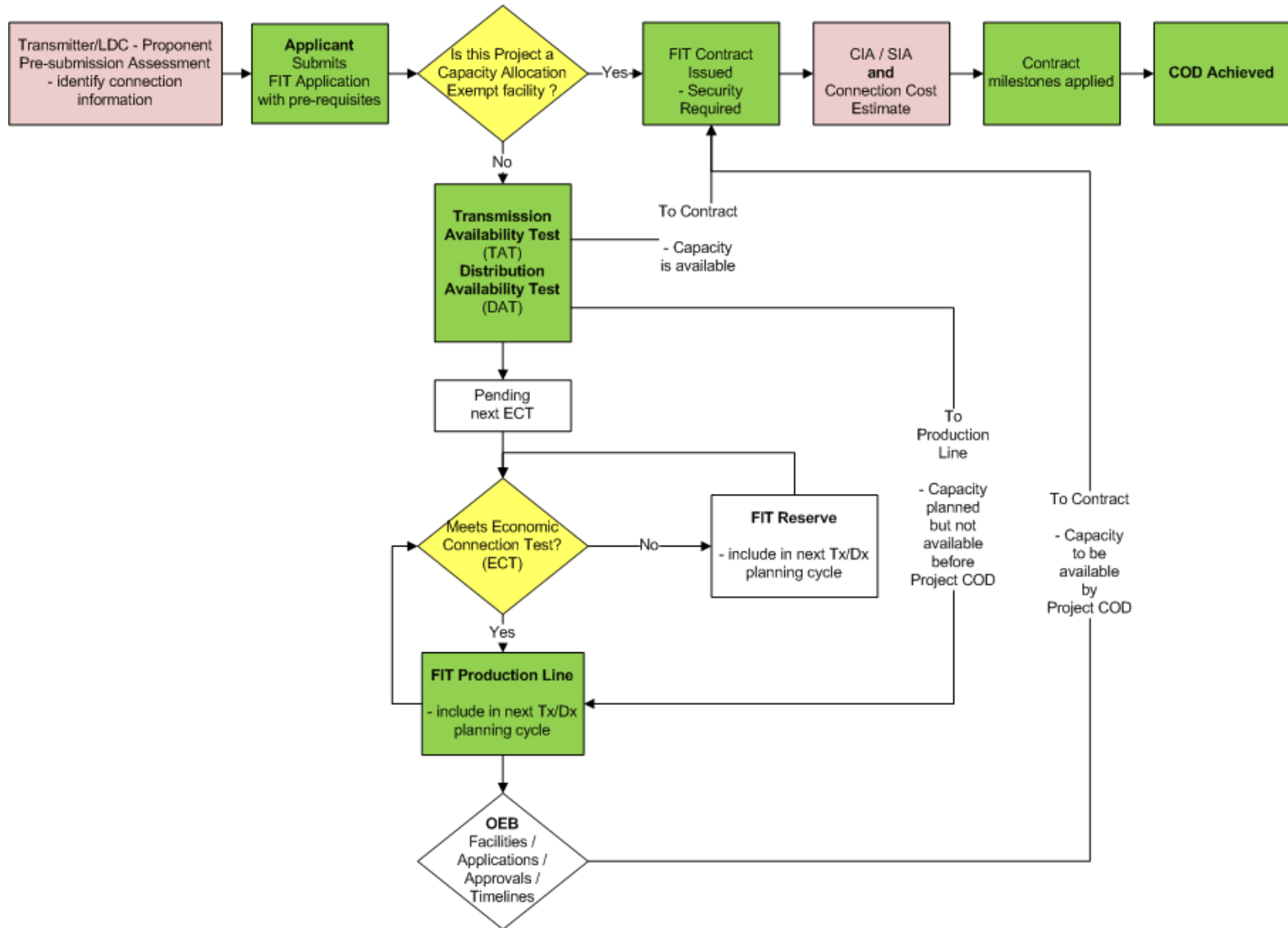
- Eligibility and Application Requirements
- Application Review and Acceptance
- Connection Assessment
- Contract Pricing
- Contract Milestones
- Contract Management and Settlement
- Program Review and Amendments



Small renewable energy supply projects

- Smaller projects will be subject to a simpler process
 - ≤ 500 kW connected at ≥ 15 kV
 - ≤ 250 kW connected at ≤ 15 kV
- OPA discussing potential program administration with Local Distribution Companies (LDC)
 - OPA successfully worked with LDCs to administer and implement the Renewable Energy Standard Offer Program (RESOP)

FIT Application Process



Proposed Project Eligibility and Application Requirements

- Eligibility requirements based on technology and size
- Limits on existing projects with previous OPA contracts
- Incremental Projects
- Application fee
- Resource plan
- Application Security

Proposed Eligibility Requirements

- Renewable Energy technologies include:
 - Wind (offshore, onshore)
 - Solar PV
 - Biomass (bio-gas, bio-fuel, landfill gas)
 - Waterpower



- Separate rules apply to projects ≤ 10 kW on residential properties
 - simplified process for micro-scale
 - OPA to work with LDC to streamline customer experience

Proposed Eligibility Requirements

- Fueled by a renewable fuel source (more than one permissible for a single project, but lowest price applies)
- Geographically and electrically located in Ontario
- A new project or an addition of incremental capacity to an existing project
 - Only the incremental capacity is eligible
- Connected to a distribution system, the transmission system or connected through a customer (*i.e.*, behind-the-meter)

Proposed Eligibility Requirements

- Must not have had, or have, a NUG contract or an OPA contract
- Previously operating facilities must have been out of service for 3 years
 - *e.g.* abandoned waterpower sites
- May be pursued by any developer in Ontario, with no limits on total contract capacity
 - Special provisions apply for Aboriginal and Community-Based projects
 - Special provisions for solar PV (>10 MW) and waterpower (> 50MW)

Proposed Eligibility Requirements

- FIT project developers must provide to the OPA:
 - Evidence of Site Access
 - Land ownership, land lease, option agreement, *etc...*
 - Resource Data or Renewable Resource Supply Plan
 - *e.g.*, wind data, supply agreements with biomass suppliers, water flow records, *etc.*
 - Renewable Energy Approval
 - Requirement is subject to details of Renewable Energy Approval process

Proposed Eligibility Requirements

- FIT project developers must provide to the OPA:
 - Details of proposed project connection point
 - Name of feeder, transformer station or high-voltage circuit
 - Non-refundable Application Fee
 - \$500 per MW of proposed Contract Capacity (maximum \$5,000)
 - \$500 minimum Application Fee
 - Application Security
 - Solar PV: \$20,000/MW
 - Other technologies: \$10,000/MW
 - Aboriginal or Community-Based Projects: \$5,000/MW

Proposed Eligibility Requirements

- Contract Prerequisites designed to require developer to undertake development work in advance of contract execution
 - Application Fee is non-refundable
 - Application Security is refundable upon contract signing or withdrawal because a project cannot be connected with existing resources

Proposed Application Review and Acceptance

- Application time stamped
- Review of application
- Connection capacity availability or approved plans for transmission or distribution
- Contracts awarded

Connection Assessment

Economic Connection Test:

What transmission is required to connect additional renewable energy supply?

- Results of the Economic Connection Test provide input to reasonable transmission and/or distribution grid expansions:
 - Integrated Power System Plan (IPSP)
 - Transmitter plans
 - LDC plans
 - Proposed OEB requirements on transmitters and/or LDCs
 - Ministerial Directives



Contract Pricing

- Opportunities for promoting Aboriginal involvement
- Pricing by technology and size
- Aboriginal Price Adder
 - Adjusts in proportion to Aboriginal Interest in renewable energy project
- Prices aim to cover total project costs and provide a reasonable rate of return over the contract term
- Prices derived using recent market data, OPA experience with previous renewable energy contracts (Renewable Energy Supply (RES), RESOP) and experience in other jurisdictions

Draft FIT Price Schedule (May 15, 2009)

Renewable Fuels	Capacity Range	Proposed Price (¢/kWh)
Rooftop or Ground Mounted Solar PV	≤ 10 kW	80.2
Rooftop Solar PV	> 10 kW ≤ 250 kW	71.3
Rooftop Solar PV	> 250 kW ≤ 500 kW	63.5
Rooftop Solar PV	> 500 kW	53.9
Ground Mounted Solar PV*	> 10 kW ≤ 10 MW	44.3
On-shore Wind*	Any size	13.5
Off-shore Wind*	Any size	19.0
Waterpower *	≤ 10 MW	13.1**
Waterpower *	> 10 MW ≤ 50 MW	12.2**
Biomass *	≤ 10 MW	13.8
Biomass*	> 10 MW	13.0
On Farm Biogas *	≤ 100 kW	19.5
On Farm Biogas *	> 100 kW ≤ 250 kW	18.5
Biogas *	≤ 500 kW	16.0
Biogas *	> 500kW ≤ 10 MW	14.7
Biogas *	> 10 MW	10.4
Landfill gas *	≤ 10 MW	11.1
	> 10 MW	10.3

*Eligible for Aboriginal or Community Adder

**Contract term for water power extended to 40 years

Incenting On-peak Production

- Technologies that are able to send out will be encouraged to shift production to on-peak periods when the electricity is most needed
 - Waterpower
 - Bio-energy
- 35% higher from 11am to 7pm on business days, and a 10% lower price during off-peak hours.
 - Projects will earn the posted FIT price multiplied by:
 - 0.9 for off-peak periods
 - 1.35 for on-peak periods
- Projects that operate 24 X 7 all year will earn the same total revenue as if they were earning the posted FIT price

Aboriginal Project Price Adder

- Varying adder in proportion to % of equity ownership by Aboriginal or Community Group, for example:
 - 50+% » 100% of price adder
 - 40% » 80% of price adder
 - 25% » 50% of price adder
 - 10% » 20% of price adder (minimum level required)
- Rationale
 - Many projects likely to be partnerships with non-Aboriginal companies
 - Encourages partnerships with Aboriginal Communities
 - Encourages Aboriginal Community partners to maximize their equity share

Aboriginal Project Price Adder

Technology	Wind	PV (Ground Mounted)	Water	Biogas	Biomass	Landfill Gas
Maximum Aboriginal Adder (cents / kWh)	1.5	1.5	0.9	0.6	0.6	0.6

Adder reflects 10% incremental capital costs

Adder reflects incremental cost of debt financing for equity portion

Adder is available on a sliding scale based on equity interest

Contract Milestones

- Security (two stages- contract offer and NTP)
 - \$20,000/MW and \$10,000/MW (wind, waterpower, biomass)
 - \$50,000/MW and \$25,000/MW (solar PV)
 - \$5,000/MW and \$5,000/MW (Aboriginal and Community based)
- Completion of all Permits and Approvals
 - Renewable Energy Approval *etc.*
- Equipment Orders
- Completed CIA/SIA



Contract Milestones

- Requirement to reach commercial operation within a specified time (3 - 5 years based on technology)
- Financing Plans
- Notice to Proceed
 - Pre-requisites
 - Likelihood of connection
 - Certainty and risk reduction

Contract Management and Settlement

- OPA responsible for ongoing contract management
 - OPA in discussions with LDCs for administering contracts for micro-scale facilities (*i.e.* ≤ 10 kW)
- OPA working with Independent Electricity System Operator (IESO) to effectively integrate renewable energy supply resources

Contract Management and Settlement

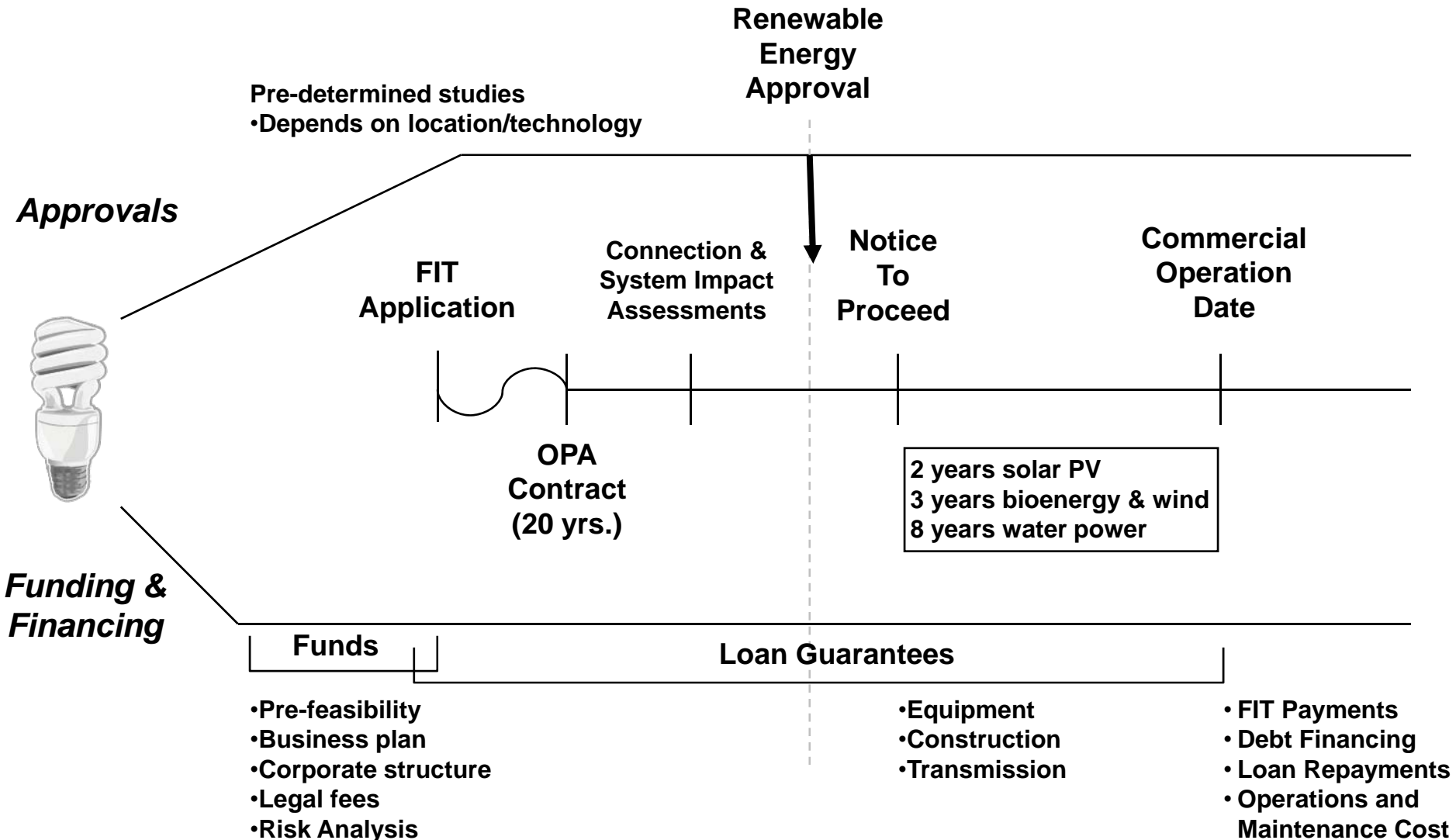
- Metering requirements in accordance with existing standards (IESO or LDC)
- Monthly payments
 - Transmission connected projects paid by IESO/OPA
 - Distribution connected projects paid by LDCs on behalf of the OPA



Program Review and Amendments

- FIT Program Review every two years
- Based on specific circumstance the proposed FIT Program Rules and/or proposed FIT Price Schedule could change ahead of the regular review period
- Specific changes may be made by Ministerial Directives or through a regulation, as per the proposed *Green Energy Act*
- Program amendments will not impact executed contracts

Community Project Development Example



Capacity Development

Centre of Excellence/Knowledge

- Information
- Resources
- Services

Project Feasibility

- Participation
- Funding
- Development of renewable energy

Community Energy Plans

- Determine energy use
- Energy Needs
- Energy Options

