

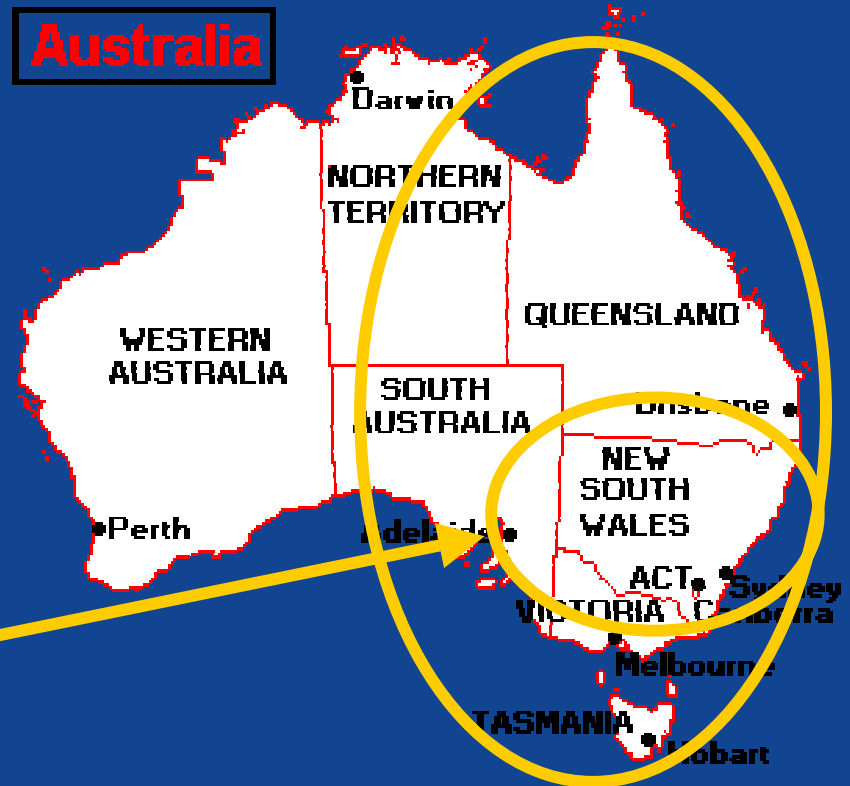
# **Innovative Aspects of Trading Systems: Lessons Learned**

## **Lessons from NSW GGAS**

**Rob Fowler  
1 November 2005**

# Australian basics

- Population/industry is concentrated in the eastern states which have an inter-connected electricity grid and deregulated market
- Energy prices are very low and most electricity is from coal
- New South Wales



# Topics in this presentation

- **How GGAS works**
- **Compliance and performance monitoring systems**
- **Role of the Scheme Administrator**
- **Innovations in project quantification**

# The Emissions Trading “Community”

- **Capacity must be developed**
  - Policy makers
  - Policy implementers
  - Emitters / Abators
  - Market players
  - Market supporters
- **Global need → time is short**  
→ **coordinated effort is required**

# How GGAS works

# GGAS outcomes

- **Shifts economics of power generation by rewarding lower emissions intensity output**
- **Encourages energy efficiency**
- **Rewards a broad range of abatement activities across sectors and gases**
- **Builds capacity for the future**
- **Balances transaction costs and integrity**
- **Creates a “price of carbon” to influence business decision making and drive innovation in abatement activities**

# Key features of GGAS

- **State based abatement scheme**
- **Targets electricity sector which produces 39% of State emissions**
- **Imposes increasing obligation on electricity retailers to purchase and surrender NGACs**
  - **Calculations based on offsetting emissions associated with production of electricity sold**
  - **5 yr rolling average used for Pool Coefficient**
- **Creates positive incentive for project proponents in power generation, energy efficiency, industrial processes & forests**

# Key features of GGAS

- Flexible structure to enable enhancement
- Commenced in 2003, targets about to be extended to 2020 then 15 year horizon
- NGAC demand strong and growing quickly
- Price capped through penalty (US\$7.5-11.0)
- NGACs created from project-based GHG abatement activities
- Projects are assessed by the Scheme Administrator based on detailed GGAS Rules (eligibility, additionality, calculations)
- Robust MRV framework

# Supply and demand basics

## Demand

**Benchmark Participants  
and other buyers**

- Electricity retailers
- Large users (elected in)
- Banks and traders
- Pro-active people/corps

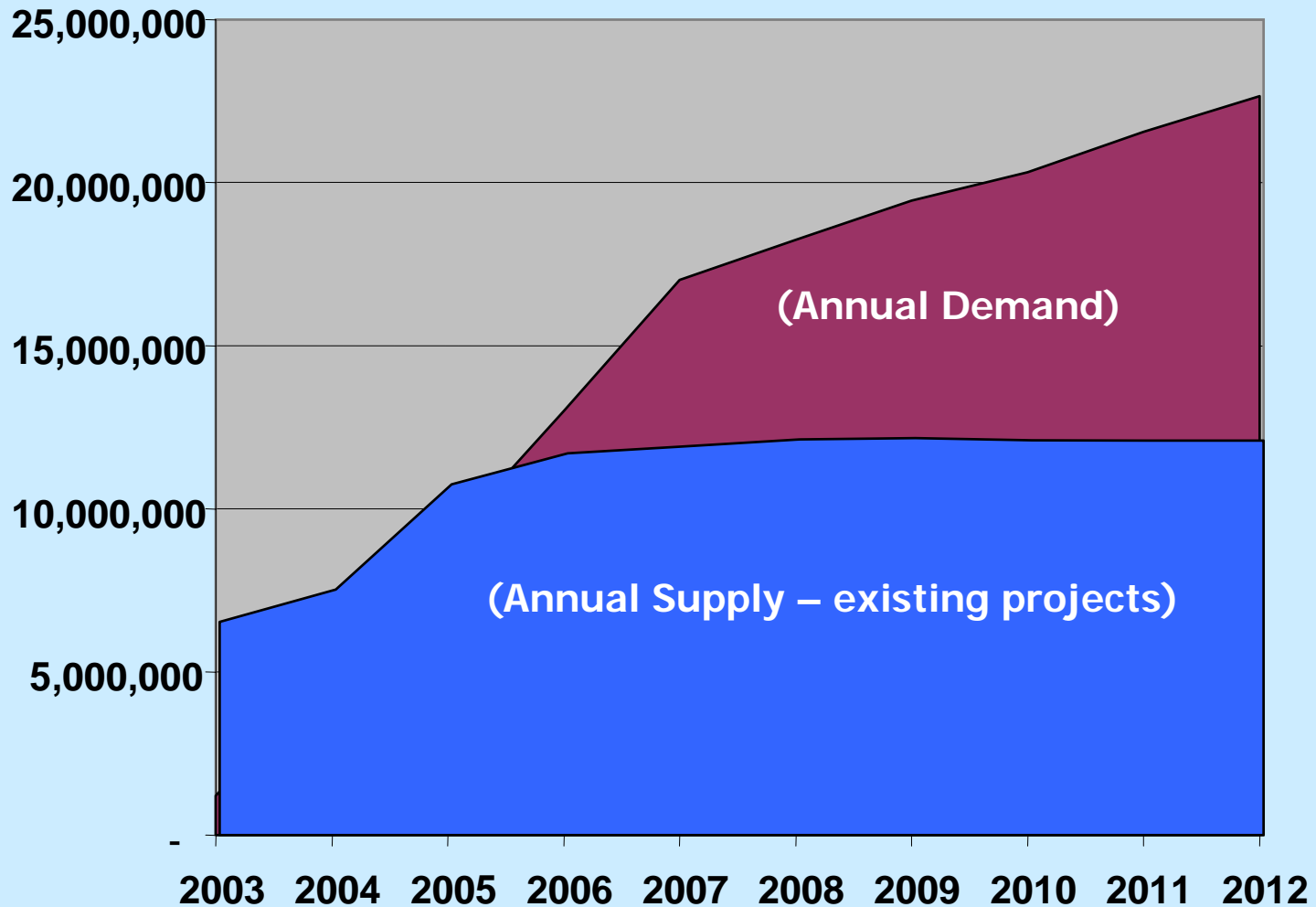
## Supply

**Abatement Certificate  
Providers**

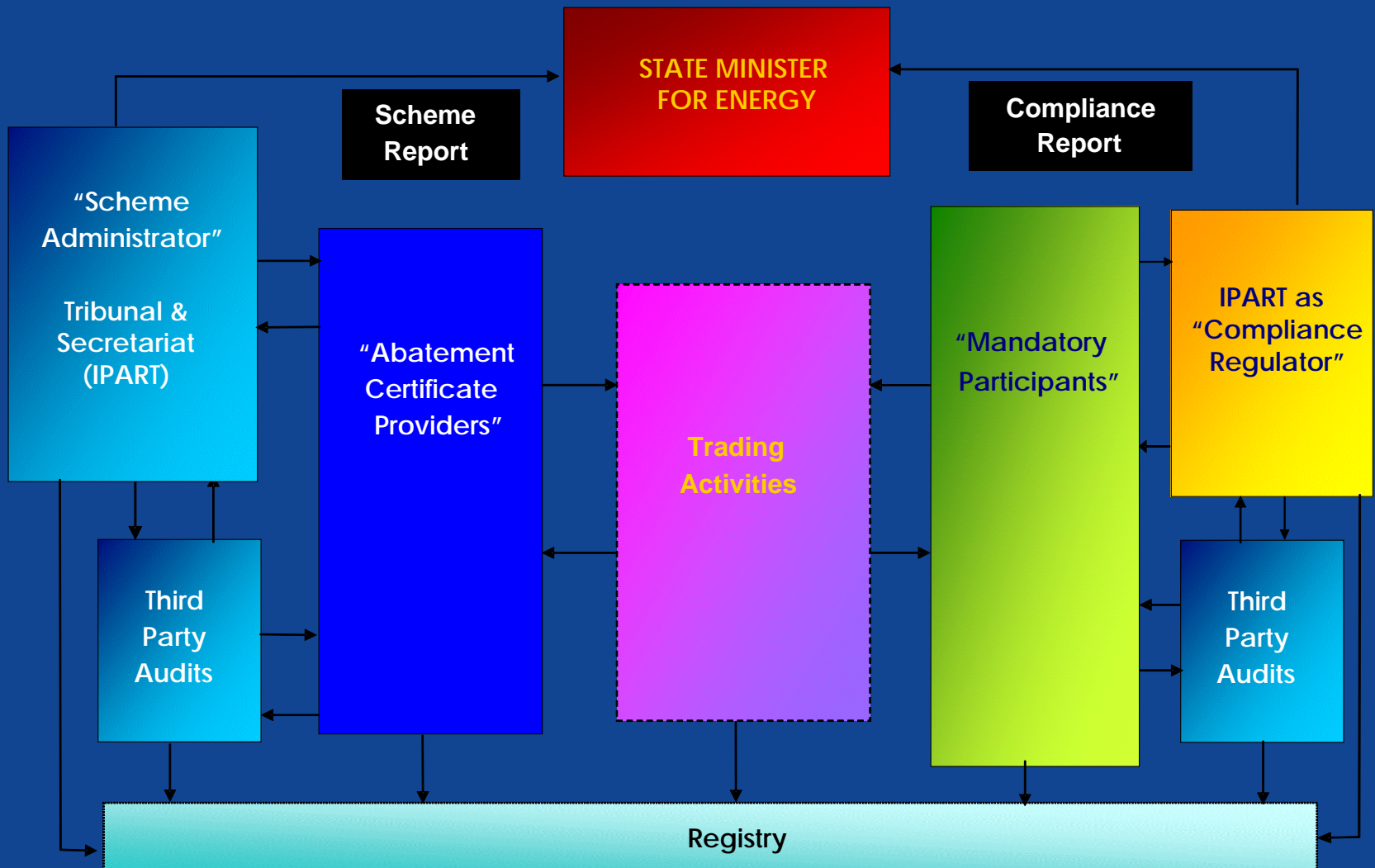
- Electricity generation
- Energy efficiency
- Carbon sequestration
- Industrial processes

**No "verification" risk for certificate buyers**

# Projection: supply and demand



# GGAS administrative structure

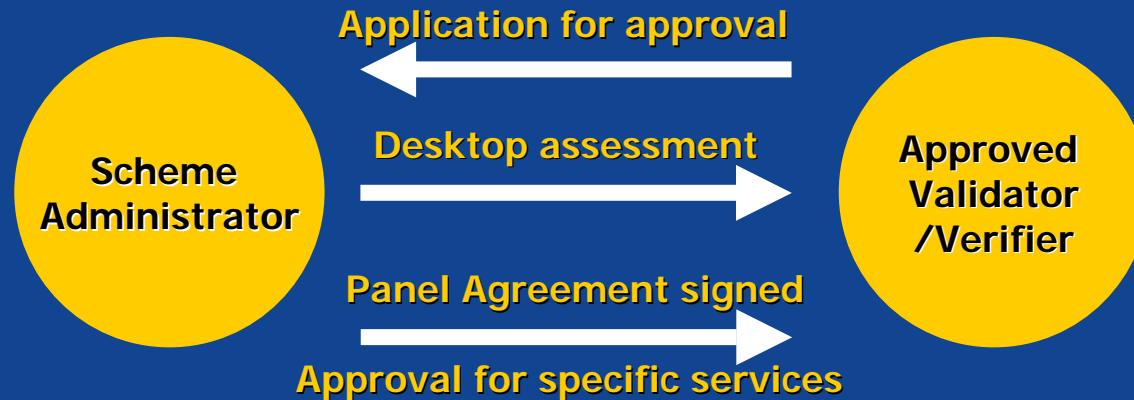


# **Compliance and performance monitoring systems**

# Project assessment and audits

- **The Scheme Administrator does the vast majority of the project assessment work**
  - Enabled by clear and prescriptive Rules
- **Third party validation / verification (audits) used selectively to minimise costs**
  - Based on a risk assessment, ie, large complex projects more likely to be audited more often
  - Scheme Administrator is always the auditor's client
- **For the whole of GGAS to date:**
  - 52+ validation audits completed (148 projects)
  - 30+ verification audits undertaken so far with many covering a portfolio of registered projects

# Approval of Validators/Verifiers



## Basis of approval:

1. Incorporated entities
2. Individual staff members

## Requirements:

1. QA processes & systems
2. Must have peer review
3. Conflict systems
4. Technical & audit skills



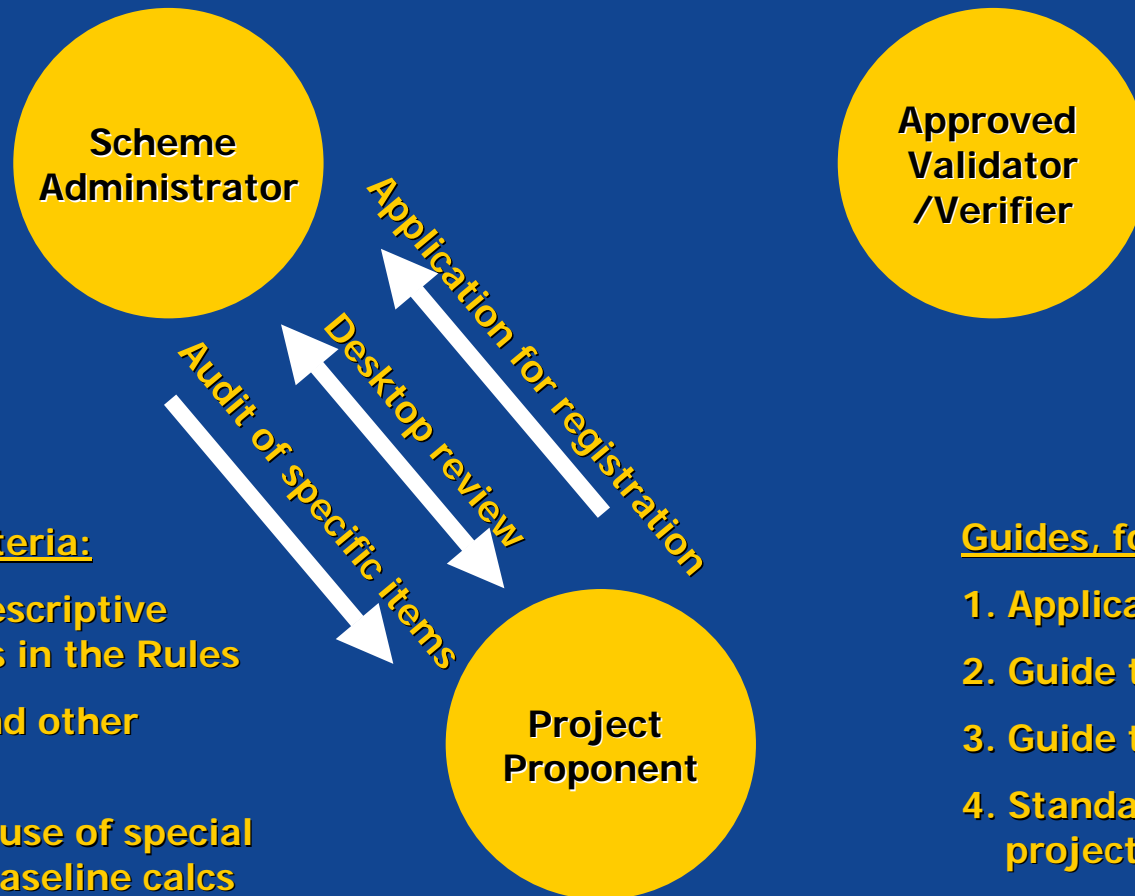
## Panel Agreement terms:

1. Insurance
2. Listing of Lead Auditors & Key Personnel
3. Confidentiality
4. Responsibilities

## Training in GGAS specifics:

1. Must be trained to work
2. Manual provided

# Project assessments



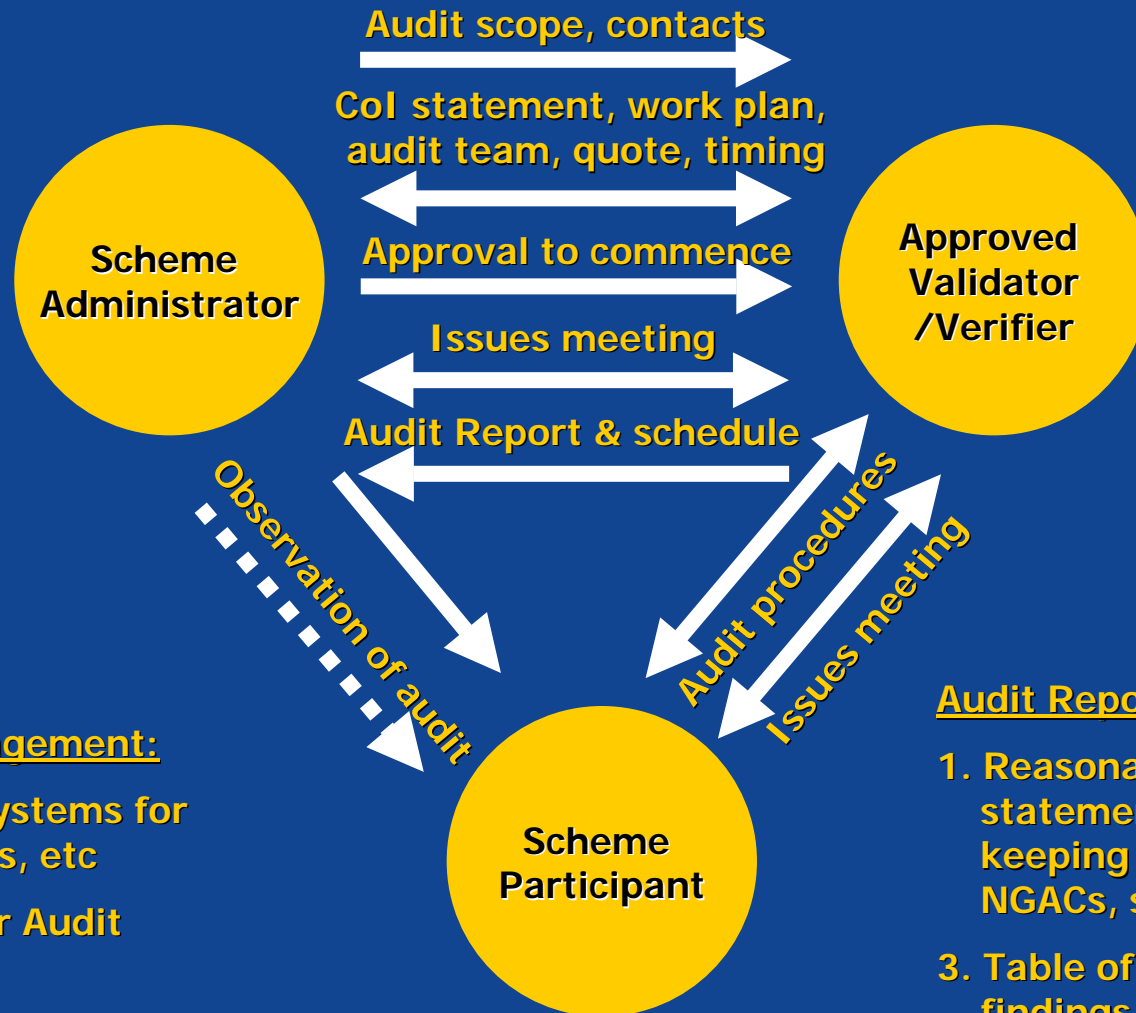
## Assessment criteria:

1. Clear and prescriptive requirements in the Rules
2. Standards and other certifications
3. Evidence for use of special factors and baseline calcs
4. Record keeping arrangements

## Guides, forms, formulas:

1. Application form
2. Guide to applying
3. Guide to record keeping
4. Standard conditions for project proponents
5. Compliance & performance monitoring strategy

# Validation audits



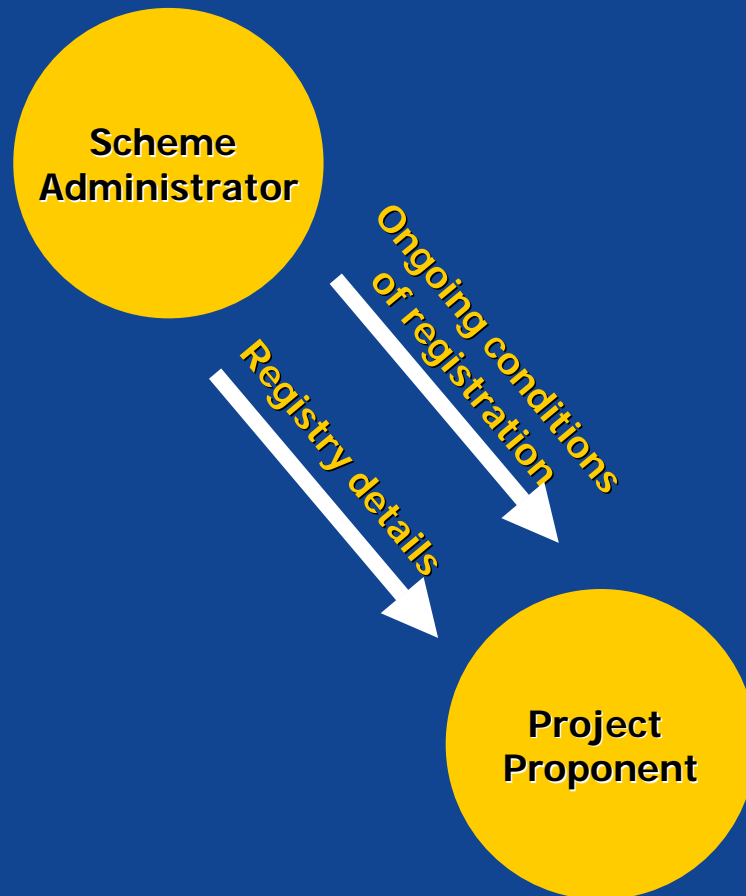
## Workflow management:

1. Automated systems for letters, emails, etc
2. Templates for Audit Reports
3. Payment tracking

## Audit Report & schedule:

1. Reasonable assurance statements on record keeping systems, estimated NGACs, special issues
3. Table of procedures and findings for each scope item
3. Suggestions for conditions

# Project registration



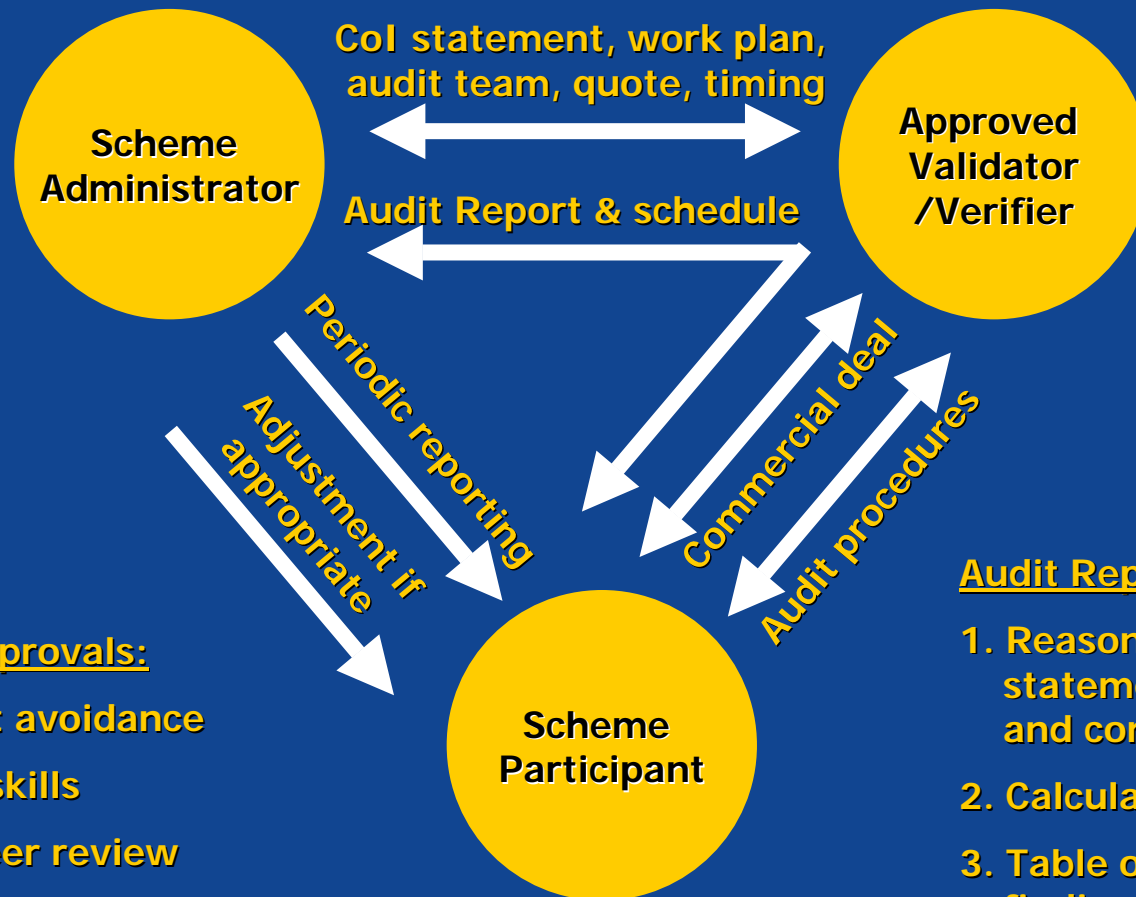
## Conditions of registration:

1. Responsibilities
2. Reporting obligations
3. Verification audit regime
4. Special conditions (record keeping, NGAC limits, etc)

# Ongoing compliance and performance monitoring

- **For projects that are registered, ongoing compliance and performance is actively monitored by the Scheme Administrator:**
  - the audit regime (annual, biannual, spot-basis)
  - periodic reporting (using templates)
  - incident reporting
  - controls within the Scheme Registry
- **Compliance of project proponents is enforced by the Scheme Administrator**
- **Powers available to invoke financial penalties, mandate activities (eg. surrender of NGACs, restoration of forests) and pursue court action**

# Ongoing project C&PM



## Engagement approvals:

1. Strict conflict avoidance
2. Appropriate skills
3. Must have peer review
4. Understanding of scope

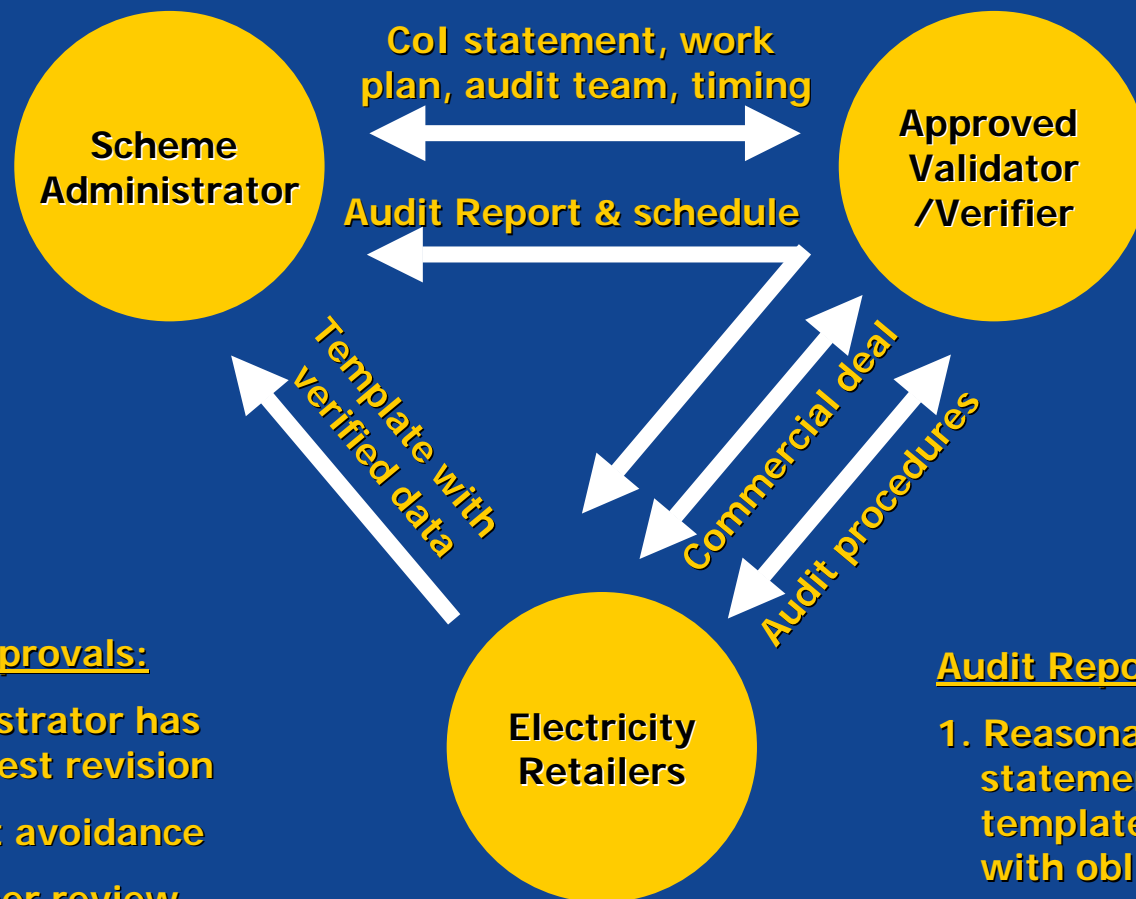
## Audit Report & schedule:

1. Reasonable assurance statements on abatement and compliance (template)
2. Calculations, inputs
3. Table of procedures and findings for each scope item
3. Suggestions for adjustment

# Transaction costs for projects

- Internal costs of providing project information and setting up systems
- A bundle or program of activities may be considered as one project (one fee):
  - One technology/approach – multiple sites
  - One site – multiple technologies/approaches
- A\$500 (US\$375) project lodgement fee
- Auditor fees for validation and verification (A\$5–15k per audit)
- Registration fee of A\$0.15 per certificate
- NGACs currently trading in a thin yet active forward and spot market, prices rising

# Annual compliance for retailers



## Engagement approvals:

Scheme Administrator has 10 days to request revision

1. Strict conflict avoidance
2. Must have peer review
3. Appropriate skills

## Audit Report & schedule:

1. Reasonable assurance statements on inputs to template and compliance with obligation
2. Suggestions for adjustment

# **Role of the Scheme Administrator**

# Legislative framework

- Liabilities imposed through State legislation
- Legislation uses a Regulation to define the role and powers of Scheme Administrator
- The details of key factors, project eligibility and methodologies are contained in a series of Rules that can be refined by the Minister

**No. 1** – Compliance (detail on liabilities and key factors)

**No. 2** – Power generation (across the inter-connected grid)

**No. 3** – Energy efficiency (NSW only)

**No. 4** – Industrial processes (Large users only, NSW only)

**No. 5** – Carbon sequestration in forests (NSW only)

# Flexibility built in

- **The legislative framework allows the overall policy intent to be consistent while allowing the details in the Rules to be fine-tuned**
  - Adjustments to align with emerging Standards
  - Lessons learned during implementation / operation
- **Scheme Administrator has just the right level of discretion to allow pragmatic approaches**
  - Tiered approach built into the calculations/factors
- **Coverage of sectors can be expanded by simply adding more Rules (eg, LULUCF, carbon capture & storage)**

# Implementation of the Scheme

- **Some guidance provided but with big gaps**
  - Eg, project assessment process, verification framework, monitoring approaches, Registry design
- **An intense development process took around nine months to go from a clean sheet of paper to registered projects and certificates**
  - Trial assessments, development of documents and guides, establishment of audit guidelines and audit panel, auditor training, setting monitoring criteria
- **Processes and frameworks have continued to be developed since “launch” in August 2003**

# Scheme participation to date

- 148 projects currently accredited
- 89 in power generation (NSW, Vic, QLD, SA)
- 54 demand side abatement (NSW)
- 4 carbon sequestration (NSW)
- 1 industrial processes (NSW)
- Over 30 projects currently being assessed and many more are being prepared for submission in all project sectors
- Participants and Scheme Administrator now gaining experience in ongoing compliance requirements and monitoring arrangements

# **Innovations in project quantification**

# Power generation projects

- **Variable measurement periods**
  - Improves accuracy and control
  - Market liquidity implications
  - Near real time calculations
- **New output vs intensity performance standard**
  - Output from new build, or output above production baselines for existing stations
  - Pool Coefficient for State – recalculated annually
- **Reductions from existing stations**
  - Quantifying performance, conservative baselines, monitoring real improvements
  - Drives upgrades with current technology as well as the development and deployment of new technologies at existing sites

# Energy efficiency projects

- **Uses Pool Coefficient for MWh → tCO<sub>2</sub>e**
  - Credit for reduced consumption, onsite generation and cogeneration
- **Default abatement factors**
  - Predetermined abatement factors for installation of small items (tCO<sub>2</sub>e/item) (eg. CFLs, appliances, water heaters)
  - Nomination structures for broad distribution
- **Bundling and simplified record keeping**
  - Variety of bundling options
  - Nomination structures
  - Record keeping templates for small projects

# Sequestration in forests

- **“Sequestration Pool” and “Manager”**
  - Pools of planted stands managed by a single entity
  - Stands can be added or removed – focus on carbon stock and carbon stock change in the total pool
- **Eligibility tests**
  - Kyoto-consistent Forests (non-Forest at 1 Jan 1990)
  - Australian Forest criteria: 0.2Ha, 2m, 20%
  - Carbon Sequestration Rights registered on title
  - Risk management, record keeping, uncertainty
- **Permanency (100 year maintenance of stocks)**
  - Three layers of assurance: pool characteristics and management, conditions of registration, strict legal instrument registered on the title of the land

**NSW GGAS**

**Scheme Administrator**

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