

# Gurteen College Education

- ▶ 1947      Agriculture and Domestic Science
- ▶ 1999      Equine
- ▶ 2003      Veterinary Nursing
- ▶ Current    12 different groups of students on  
              above courses
- ▶ Future     Energy

# Gurteen College Energy Electricity

- ▶ ESB customer for many years
- ▶ Airtricity customer since 2005
- ▶ Annual bill of €60 000

# Gurteen College Energy Heat

- ▶ 1982 Straw burning Boiler
- ▶ 1984 Broken Hearts
- ▶ 1985 Converted to Briquettes/Oil
- ▶ 2000 Major overhaul of existing boiler
- ▶ Current heating bill approaching €60,000

# Wind Turbine

- ▶ 2010 50kw turbine installed
- ▶ Peak production 70kw
- ▶ Base load daytime 80kw
- ▶ Base load night 60kw
- ▶ Export price to grid €0.00 ie Nothing!!
- ▶ Part funded by SEAI and Julia Trench Trust
- ▶ Payback 8 – 10 years at current prices

# Serve Planning Timeline for energy efficiency

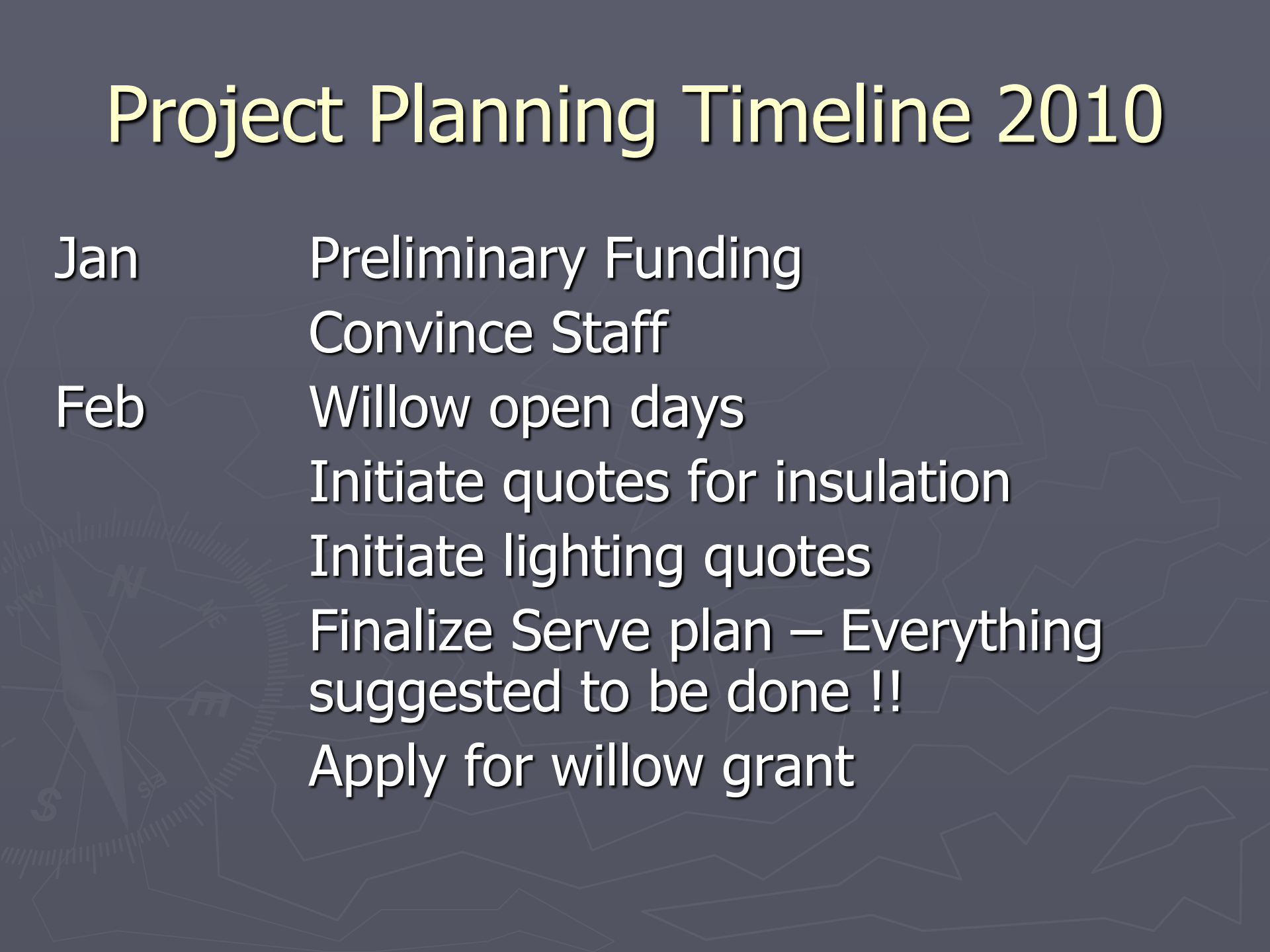
- ▶ July 2009 Initial Meeting
- ▶ Nov 2009 Energy report survey
- ▶ Jan 2010 Energy report

# Serve Report

- ▶ 1 Energy efficiency – Insulate and upgrade
- ▶ 2 Lighting – Change to reduce electricity use
- ▶ 3 Boilers and heating – Change boiler and manage system to reduce energy use

In addition an application to Min of Ag for willow planting grant to be considered

# Project Planning Timeline 2010



Jan Preliminary Funding  
Convince Staff

Feb Willow open days  
Initiate quotes for insulation  
Initiate lighting quotes  
Finalize Serve plan – Everything suggested to be done !!  
Apply for willow grant

# Project planning Timeline 2010

Mar

Staff meetings to relay facts and update

Finalize insulation quotes and select preferred contractor

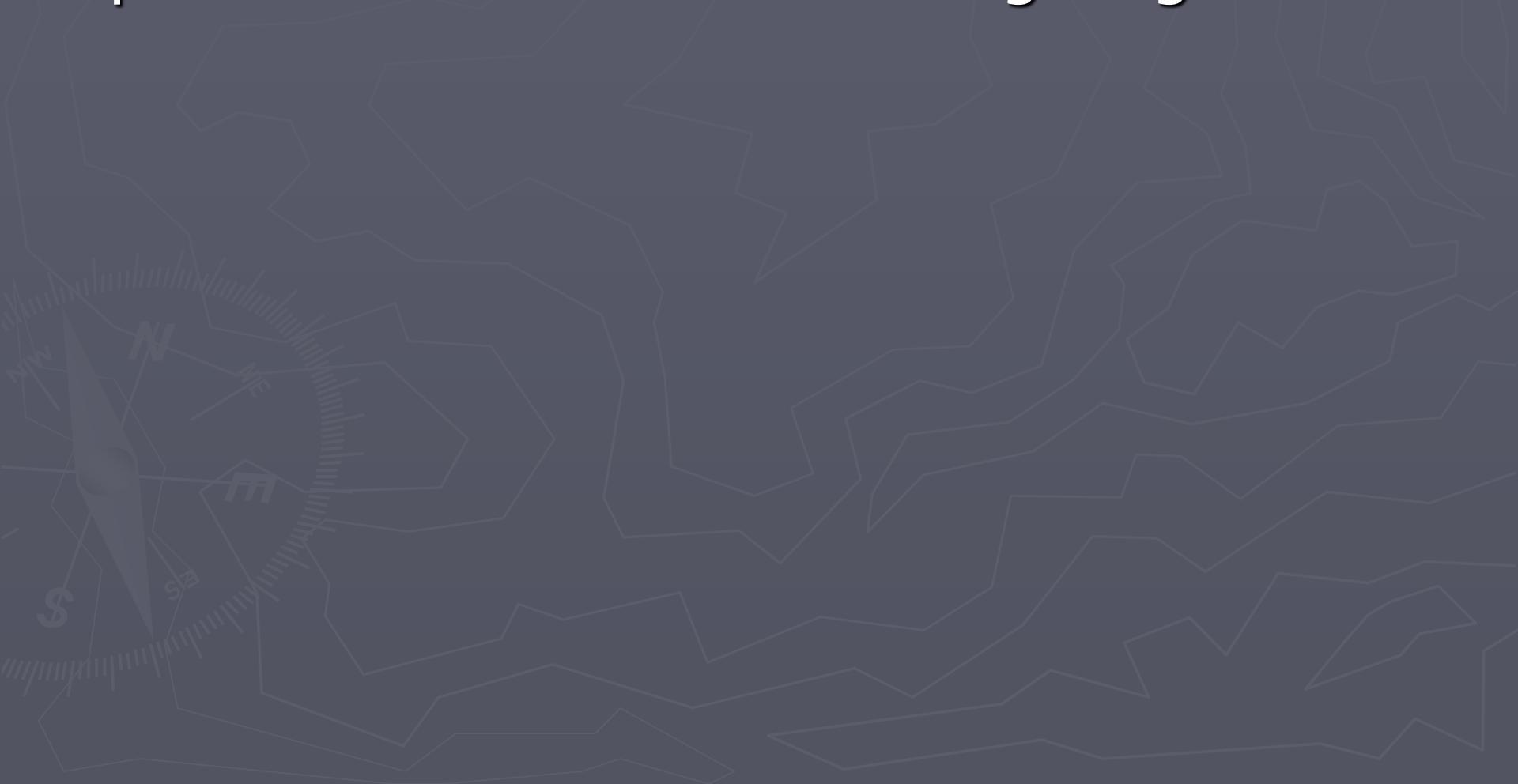
Finalize lighting and select preferred contractor

Finalize willow planting and select firm to plant



# Project planning Timeline 2010

April to Nov      Insulation and lighting Action



# Project planning Timeline Willow

2010

April	Plant 15ha and pre emergence herbicide Inspect weekly
July	Guarded band sprayer Diquat
Dec	Ministry Inspection

2011

Feb	Cut back
Mar	Spray with contact weedkiller
April	Spray with pre-emergence Plant further 16.2ha and repeat above

# Boiler Planning 2010

March	Visit to Cloughjordan Ecovillage Boiler consultant visit
April	2 day visit to N.Ireland. Visit 8 sites Decision to self manage
Apr/May	5 firms visit and provide ideas and quotes on their own plans
June	Preferred company selected. Rural Generation(same as willow planting)

# Boiler Project planning

Rationale – 1 firm from 'field to bedroom'

Timescale – Heat by 7<sup>th</sup> September

- Biomass asap
- Control in time

Financial – Cash flow issues in September

- Arrange loans

Willow drying – Complete by December

# Boiler Project actual

Oil boiler functioning on 6<sup>th</sup> September but  
roof on shed not complete!!

Boiler 1 biomass functioning 1<sup>st</sup> October

Plumbing complete November with controls

Drying shed complete March 2011

Expansion of controls

April 2011 to main college

# Boiler Fuel 2010 to 2015

Oct – Dec '10 Purchased willow at 18% moisture

Dec10–Jan11 Purchased spruce woodchip

Feb11-Mar13 Purchase heat

April'13 Burn Willow chip

# The vision completed

- ▶ Grow fuel on site. 30 ha willow.
- ▶ Dry and store fuel on site.
  - 2x300kw KWB boilers
  - District heating to most buildings
  - Computer control of all circuits

# The Reason

- ▶ Current electricity bill €60,000 per annum
- ▶ 2015 electricity bill ? €90,000 per annum
- ▶ Turbine will produce 25 – 35% of need
- ▶ Current fuel bill €60,000 and could soon have been €90,000
- ▶ Fuel cost from 2013 is the cost of harvesting and drying 300t willow chip
- ▶ Take control of future



# Energy Efficiency

- ▶ Burn fuel efficiently
- ▶ Insulate everywhere possible
- ▶ Control heating systems
- ▶ Reduce electricity use
- ▶ 40% grants available in North Tipperary
- ▶ Educate students and staff