

7. Phase I Review:

7.1. Ballinrobe, Co. Mayo

7.1.1. Findings of Review

As per the 'Deliverables' in the Terms of Reference, Phase I towns for which new or additional information has been received are also included in this report.

The original load analysis and cost estimate data from the Phase I Analysis of Ballinrobe is as follows:

Source: Networks cost estimates report July 2006.

Industrial / Commercial Load Summary Forecast:

| | | |
|-----------------------|------------|----------------|
| Total EAC 2014 | 3,257 MWh | 111,174 Therms |
| Peak Day 2014 | 21,127 kWh | 721 Therms |

New Housing Summary Forecast:

| | |
|---------------------------------|-------------------|
| New Housing Load (Therm) | 208,000 (year 10) |
| New Housing Load (MWh) | 6,096 (year 10) |

Source: Networks cost estimates report July 2006.

Estimated Capital expenditure Costs for feeder and Distribution Mains:

| Item | Costs € |
|---|--------------------|
| Feeder / Distribution Main Construction | € 3,750,630 |
| Total Estimated Costs | € 3,750,630 |

Summary: Results from Phase I Analysis of Ballinrobe

| €m | NPV @ 5.74% |
|----------------------------|--------------|
| Distribution | |
| Revenue | 1.1 |
| Capex | -4.0 |
| Contributions | 0.1 |
| Opex | -0.9 |
| Distribution NPV | -3.7 |
| Transmission | |
| Onshore Revenue | 0.3 |
| Entry Revenue | 0.2 |
| Capex - AGI | 0.0 |
| Initial Capex - Land & Tee | |
| Opex | 0.0 |
| Transmission NPV | 0.5 |
| Total NPV | -3.12 |

Phase I analysis found that connection of Ballinrobe to the network would result in a negative net present value (NPV) of €3.12m and therefore appeared to be uneconomic on a stand-alone basis.

Ballinrobe Town:

Following a submission from the Ballinrobe Business Group, a review was carried out of the potential loads in the town and the costs associated with providing the necessary network infrastructure to connect them. The tables below show the revised Load Analysis, Cost Estimate and Business modelling for the town.

Summary Load Analysis:

Ballinrobe, Co. Mayo

Source: Networks cost estimates report July 2007.

Industrial / Commercial Load Summary Forecast:

| | | |
|-----------------------|------------|----------------|
| Total EAC 2014 | 12,311 MWh | 420,175 Therms |
| Peak Day 2014 | 63,788 kWh | 2,177 Therms |

New Housing Summary Forecast:

| | |
|---------------------------------|-------------------|
| New Housing Load (Therm) | 416,000 (year 10) |
| New Housing Load (MWh) | 12,192 (year 10) |

Cost Estimates:

Estimated Capital expenditure Costs for feeder and Distribution Mains:

| Item | Costs € |
|---|--------------------|
| Transmission AGI | €0 |
| Feeder / Distribution Main Construction | € 3,956,916 |
| Total Estimated Costs | € 3,956,916 |

These estimated costs include for the following:

District regulator installations, special engineering difficulties (crossings), archaeological survey, local authority charges, adverse ground conditions, pre-tender investigations, insurance, design, administration, material procurement and construction contracts.

The estimates do not include for:

New housing estate mains, service or meter costs.
Industrial / Commercial mains, service or meter costs.

7.1.2. Business Modelling:

The revised Phase I analysis for Ballinrobe is as follows:

| €m | NPV @ 5.2% |
|----------------------------|-------------------|
| DISTRIBUTION | |
| Distribution Revenue | 2.95 |
| Capex | -4.61 |
| Contributions | 0.18 |
| Opex | -0.88 |
| Distribution Total | -2.36 |
| TRANSMISSION | |
| Onshore Revenue | 0.78 |
| Entry Revenue | 0.54 |
| Capex - AGI | 0.00 |
| Initial Capex - Land & Tee | 0.00 |
| Opex | 0.00 |
| Transmission Total | 1.31 |
| NETWORK TOTAL | -1.05 |

Connection of Ballinrobe to the network results in a negative net present value (NPV) of €1.05m and therefore connection of this town is uneconomic on a standalone basis.

7.1.3. Results

When the above details are incorporated into the original Phase I table using the new published Rate of Return of 5.2% and the 2007/2008 tariffs, the net effect is that the overall NPV of the group has increased and this results in the addition of one more town to the 11 approved in the Phase I Study. The revised table of results for the group is as follows:

Revised Summary Table for Phase I Towns

| Viable Towns | Distribution NPV (€m) | Transmission NPV (€m) | Total NPV (€m) | NPV Rank | NPV / Therm | NPV / Therm Rank | Connection Ranking+ |
|--------------------------|-----------------------|-----------------------|----------------|----------|-------------|------------------|---------------------|
| Castlebar | €0.56 | €5.12 | €5.68 | 1 | €21.31 | 1 | 1 |
| Craughwell | €0.68 | -€0.01 | €0.67 | 2 | €16.35 | 2 | 2 |
| Westport | -€1.96 | €2.36 | €0.40 | 3 | €2.85 | 4 | 3 |
| Athenry | €0.47 | -€0.14 | €0.34 | 4 | €6.66 | 3 | 4 |
| Claremorris | -€0.63 | €0.03 | -€0.59 | 6 | -€10.50 | 7 | 5 |
| Tuam | -€1.54 | €0.60 | -€0.94 | 7 | -€11.14 | 8 | 6 |
| Headford* | -€0.71 | €0.75 | €0.04 | 5 | €0.72 | 5 | 7 |
| Ballyhaunis*** - Knock** | -€3.27 | €2.31 | -€0.96 | 8 | -€7.74 | 6 | 8 |
| Ballinrobe | -€2.36 | €1.31 | -€1.05 | 9 | -€17.15 | 9 | 9 |
| Ballina | -€4.57 | €1.66 | -€2.91 | 10 | -€20.76 | 10 | 10 |
| <i>Total NPV</i> | | | €0.68 | | | | |

| Non - Viable Towns | Distribution NPV (€m) | Transmission NPV (€m) | Total NPV (€m) | NPV Rank | NPV / Therm | NPV / Therm Rank | Connection Ranking+ |
|--------------------------------|-----------------------|-----------------------|----------------|----------|-------------|------------------|---------------------|
| Kiltamagh - Foxford - Swinford | -€9.16 | €1.52 | -€7.64 | 12 | -€106.71 | 11 | 11 |
| Belmullet | -€6.31 | -€0.53 | -€6.83 | 11 | -€296.85 | 12 | 12 |

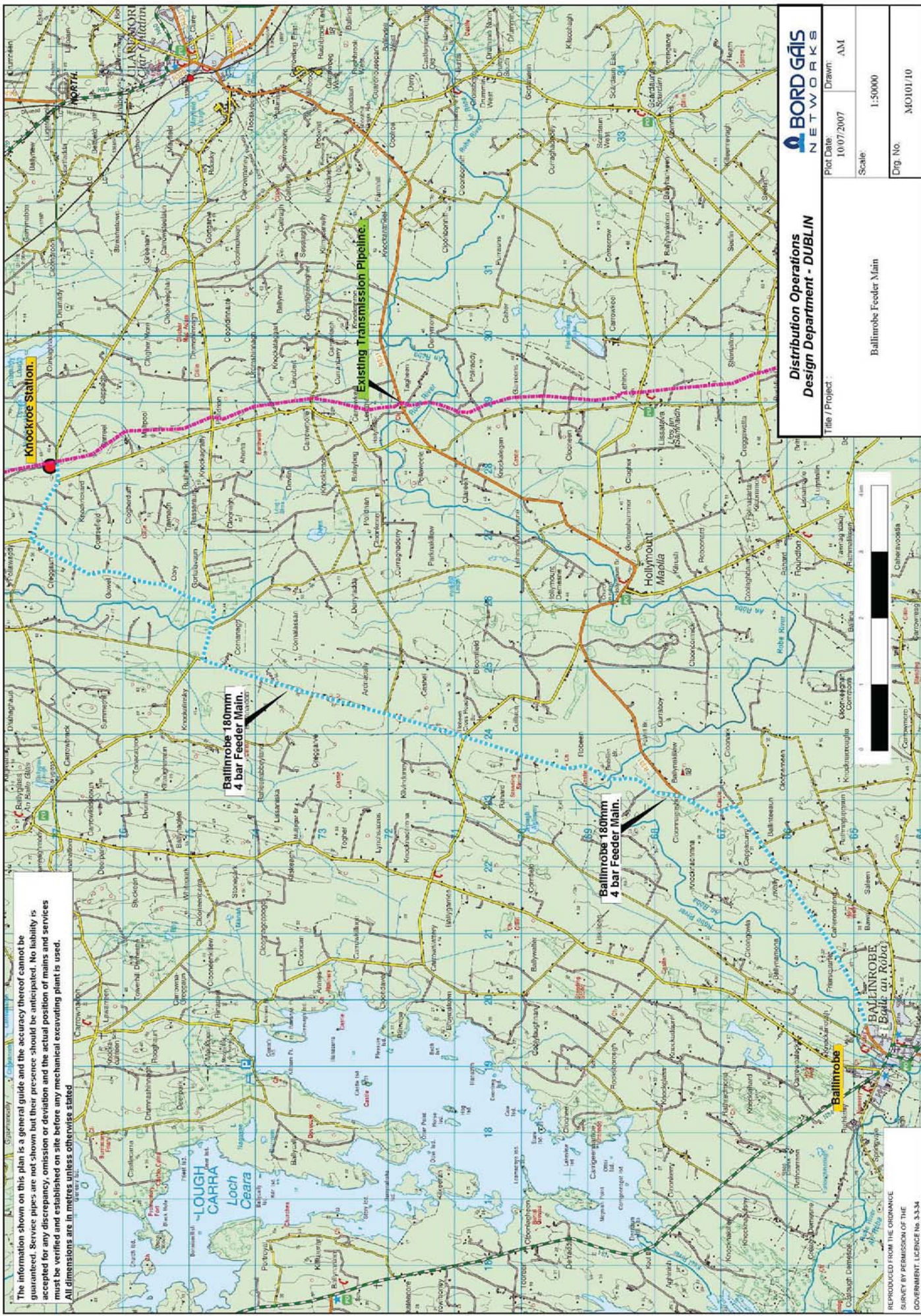
Please note: the Connection Ranking+ takes into account that the connection of some towns is dependant on other towns e.g. Headford, Ballyhaunis & Knock and hence is different from the straight from NPV ranking.

* Dependent on Tuam being connected

** Dependent on Claremorris being connected

*** Dependent on Claremorris and Knock being connected

As can be seen, Ballinrobe now qualifies for connection, and the original findings of the Phase I study remain valid.



BORD GÁIS NETWORKS

**Distribution Operations
Design Department - DUBLIN**

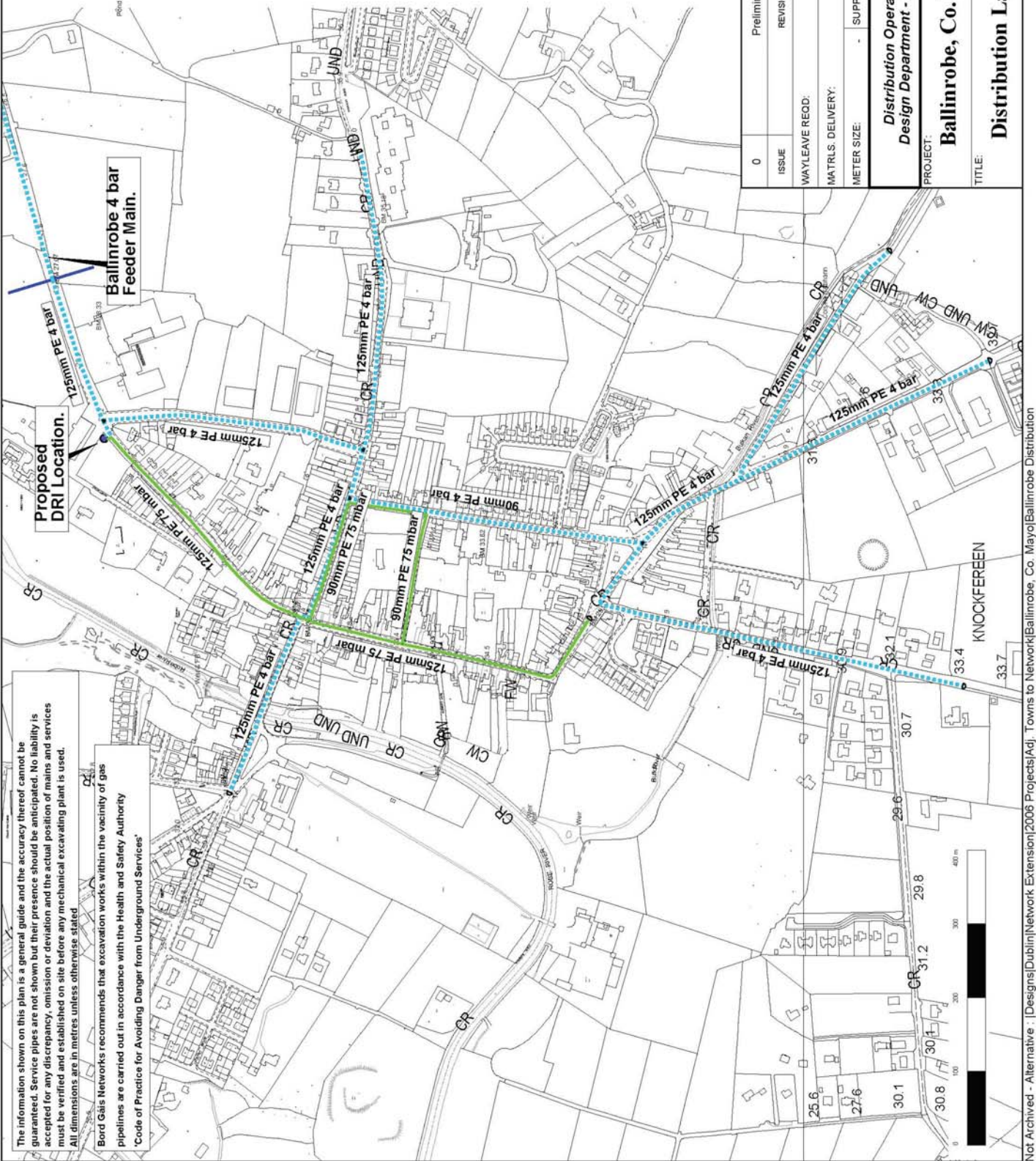
| | | | |
|------------|------------|------------------------|----|
| Plot Date: | 10/07/2007 | Drawn: | AM |
| Scale: | 1:50000 | Ballinrobe Feeder Main | |
| Dir. No.: | MO101/10 | | |

Title / Project:

REPRODUCED FROM THE ORDINANCE SURVEY BY PERMISSION OF THE GOVERNMENT. LICENCE No. 3.3.34

REPRODUCED FROM THE ORDINANCE SURVEY BY PERMISSION OF THE GOVERNMENT LICENCE No. 3.3.34

NORTH



Bord Gáis Networks recommends that excavation works within the vicinity of gas pipelines are carried out in accordance with the Health and Safety Authority 'Code of Practice for Avoiding Danger from Underground Services'.

| | | | | |
|---|----------|----------|----------|----------|
| AM | 10/07/07 | 10/07/07 | 10/07/07 | 10/07/07 |
| ISSUE | 0 | 0 | 0 | 0 |
| WAYLEAVE RECD. | | | | |
| MATRLS. DELIVERY: | | | | |
| METER SIZE: | | | | |
| SURVEYED BY: | | | | |
| OUTLET PRESS: | | | | |
| BORD GÁIS NETWORKS | | | | |
| Distribution Operations Design Department - DUBLIN | | | | |
| PROJECT: Ballinrobe, Co. Mayo | | | | |
| DATE: 03/07/2006 SCALE: 1:5000 | | | | |
| DRAWN: E.M. APPR.: A.T. | | | | |
| DRG. NO. PROJ. NO. SH. | | | | |
| MO101/11 MO/101 - | | | | |
| Distribution Layout | | | | |

7.2. Gort & Loughrea, Co. Galway

7.2.1. Boundary Sensitivity

The original map included in the Phase I study has been revised to take into account examination of group boundaries that best match the most likely physical connectivity of towns and common sharing of infrastructure and operational costs, towns grouped because of their close proximity to each other and the inclusion of additional towns to the overall list. The intention is to minimise capital and operational costs and therefore maximise the economic potential for towns when grouped together.

Following the review of the Phase I group above, the boundary chosen for Phase I was examined to optimise the ellipse boundary for viability of potential towns, particularly the adjacent group of Gort and Loughrea.

Therefore, if the boundary of the Phase I group is extended to encompass Gort & Loughrea and the resultant 18 towns are analysed, the following is the resultant table:

Revised Summary Table for Phase I Towns Including Gort & Loughrea

| Viable Towns | Distribution NPV (€m) | Transmission NPV (€m) | Total NPV (€m) | NPV Rank | NPV / Therm | NPV / Therm Rank | Connection Ranking+ |
|--------------------------|-----------------------|-----------------------|----------------|----------|-------------|------------------|---------------------|
| Castlebar | €0.56 | €5.12 | €5.68 | 1 | €21.31 | 1 | 1 |
| Craughwell | €0.68 | -€0.01 | €0.67 | 2 | €16.35 | 2 | 2 |
| Westport | -€1.96 | €2.36 | €0.40 | 3 | €2.85 | 4 | 3 |
| Athenry | €0.47 | -€0.14 | €0.34 | 4 | €6.66 | 3 | 4 |
| Gort | €0.22 | -€0.32 | -€0.10 | 6 | -€2.53 | 6 | 5 |
| Loughrea | -€1.58 | €1.23 | -€0.35 | 7 | -€6.10 | 7 | 6 |
| Claremorris | -€0.63 | €0.03 | -€0.59 | 8 | -€10.50 | 9 | 7 |
| Tuam | -€1.54 | €0.60 | -€0.94 | 9 | -€11.14 | 10 | 8 |
| Headford* | -€0.71 | €0.75 | €0.04 | 5 | €0.72 | 5 | 9 |
| Knock** - Ballyhaunis*** | -€3.27 | €2.31 | -€0.96 | 10 | -€7.74 | 8 | 10 |
| Ballinrobe | -€2.36 | €1.31 | -€1.05 | 11 | -€17.15 | 11 | 11 |
| Ballina | -€4.57 | €1.66 | -€2.91 | 12 | -€20.76 | 12 | 12 |
| Total NPV | | | €0.22 | | | | |

| Non - Viable Towns | Distribution NPV (€m) | Transmission NPV (€m) | Total NPV (€m) | NPV Rank | NPV / Therm | NPV / Therm Rank | Connection Ranking+ |
|--------------------------------|-----------------------|-----------------------|----------------|----------|-------------|------------------|---------------------|
| Kiltamagh - Foxford - Swinford | -€9.16 | €1.52 | -€7.64 | 14 | -€106.71 | 13 | 13 |
| Belmullet | -€6.31 | -€0.53 | -€6.83 | 13 | -€296.85 | 14 | 14 |

Please note: the Connection Ranking+ takes into account that the connection of some towns is dependant on other towns e.g. Headford, Ballyhaunis & Knock and hence is different from the straight from NPV ranking.

* Dependent on Tuam being connected

** Dependent on Claremorris being connected

*** Dependent on Claremorris and Knock being connected

7.2.2. Results

It can be seen that Gort & Loughrea are now viable as a result of the analysis of the enlarged Phase I group. The original findings of the Phase I study remain valid.

8. Summary Results Tables - Phase II Analysis

| Viable Towns | Distribution NPV (€m) | Transmission NPV (€m) | Total NPV (€m) | NPV / Therm |
|--|-----------------------|-----------------------|----------------|-------------|
| Cashel | €0.47 | €2.76 | €3.23 | €23.36 |
| Cahir | -€0.04 | €1.01 | €0.97 | €14.94 |
| Gort* | €0.22 | -€0.32 | -€0.10 | -€2.53 |
| Loughrea* | -€1.58 | €1.23 | -€0.35 | -€6.10 |
| Ballinrobe* | -€2.36 | €1.31 | -€1.05 | -€17.15 |
| Monasterevin (Reinforcement Option) | €0.57 | €1.28 | €1.84 | €23.32 |

* When included in Phase I grouping.

| Non - Viable Towns | Distribution NPV (€m) | Transmission NPV (€m) | Total NPV (€m) | NPV / Therm |
|--------------------|-----------------------|-----------------------|----------------|-------------|
| Mountmellick | -€3.41 | €0.75 | -€2.66 | -€75.82 |
| Mountrath | -€3.53 | €0.50 | -€3.03 | -€129.44 |
| Abbeyleix | -€4.01 | €0.70 | -€3.31 | -€101.00 |

| Non - Viable Grouped Towns | Distribution NPV (€m) | Transmission NPV (€m) | Total NPV (€m) | NPV / Therm |
|--|-----------------------|-----------------------|----------------|-------------|
| Cashel and Thurles | -€4.34 | -€7.61 | -€11.95 | -€67.13 |
| Youghal and Dungarvan | -€4.26 | -€8.68 | -€12.94 | -€68.28 |
| Enniscorthy, Wexford, Gorey and New Ross | -€22.14 | -€13.37 | -€35.51 | -€104.22 |

Summary Results Table - Phase II Analysis

| Stand Alone Towns | Distribution Revenue | Distribution Capex | Contributions | Distribution Opex | Distribution NPV (€m) | Onshore Revenue | Entry Revenue | Transmission Capex - AGI | Transmission Opex | Transmission NPV (€m) | Total NPV (€m) | NPV/kWh | NPV/therm |
|-------------------|----------------------|--------------------|---------------|-------------------|-----------------------|-----------------|---------------|--------------------------|-------------------|-----------------------|----------------|---------|-----------|
| Cashel | 5.92 | -5.50 | 0.25 | -0.21 | 0.47 | 1.67 | 1.16 | -0.05 | -0.01 | 2.76 | 3.23 | €0.85 | €24.87 |
| Cahir | 2.81 | -2.86 | 0.13 | -0.11 | -0.04 | 0.84 | 0.58 | -0.24 | -0.17 | 1.01 | 0.97 | €0.51 | €14.94 |
| Mountmellick | 1.71 | -5.05 | 0.10 | -0.17 | -3.41 | 0.44 | 0.31 | 0.00 | 0.00 | 0.75 | -2.66 | -€2.59 | -€75.82 |
| Mountrath | 1.20 | -4.58 | 0.10 | -0.24 | -3.53 | 0.29 | 0.20 | 0.00 | 0.00 | 0.50 | -3.03 | -€4.42 | -€129.44 |
| Abbeyleix | 1.60 | -5.45 | 0.10 | -0.26 | -4.01 | 0.41 | 0.29 | 0.00 | 0.00 | 0.70 | -3.31 | -€3.45 | -€101.00 |
| Monasterevin | 3.92 | -7.24 | 0.27 | -0.29 | -3.33 | 1.00 | 0.69 | 0.00 | 0.00 | 1.69 | -1.65 | -€0.71 | -€20.84 |
| Loughrea | 2.86 | -4.40 | 0.20 | -0.24 | -1.58 | 0.73 | 0.50 | 0.00 | 0.00 | 1.23 | -0.35 | -€0.21 | -€6.10 |
| Gort | 1.96 | -1.77 | 0.14 | -0.10 | 0.22 | 0.50 | 0.34 | -0.95 | -0.21 | -0.32 | -0.10 | -€0.09 | -€2.53 |
| Ballinrobe | 2.95 | -4.61 | 0.18 | -0.88 | -2.36 | 0.78 | 0.54 | 0.00 | 0.00 | 1.31 | -1.05 | -€0.59 | -€17.15 |

| Grouped Towns* | Distribution Revenue | Distribution Capex | Contributions | Distribution Opex | Distribution NPV (€m) | Onshore Revenue | Entry Revenue | Transmission Capex - AGI | Transmission Opex | Transmission NPV (€m) | Total NPV (€m) | NPV/kWh | NPV/therm |
|----------------|----------------------|--------------------|---------------|-------------------|-----------------------|-----------------|---------------|--------------------------|-------------------|-----------------------|----------------|---------|-----------|
| Cashel | 4.22 | -2.99 | 0.22 | -0.21 | 1.25 | 1.13 | 0.78 | -5.35 | -0.38 | -3.82 | -2.57 | -€1.00 | -€29.35 |
| Thurles | 4.27 | -8.33 | 0.24 | -1.76 | -5.59 | 1.15 | 0.80 | -5.35 | -0.38 | -3.79 | -9.38 | -€3.54 | -€103.73 |
| Youghal | 4.56 | -3.00 | 0.34 | -0.92 | 0.98 | 1.14 | 0.79 | -5.87 | -0.49 | -4.42 | -3.44 | -€1.29 | -€37.85 |
| Dungarvan | 4.88 | -8.99 | 0.35 | -1.48 | -5.24 | 1.24 | 0.86 | -5.87 | -0.49 | -4.26 | -9.49 | -€3.29 | -€96.38 |
| Wexford | 7.34 | -11.92 | 0.43 | -1.38 | -5.52 | 2.00 | 1.38 | -4.87 | -0.30 | -1.79 | -7.31 | -€1.59 | -€46.63 |
| New Ross | 2.24 | -7.75 | 0.15 | -1.26 | -6.62 | 0.60 | 0.42 | -4.87 | -0.30 | -4.15 | -10.78 | -€7.75 | -€227.13 |
| Gorey | 3.11 | -8.51 | 0.25 | -1.26 | -6.41 | 0.79 | 0.55 | -4.87 | -0.30 | -3.84 | -10.24 | -€5.58 | -€163.54 |
| Ennisceorthy | 3.63 | -6.31 | 0.26 | -1.15 | -3.59 | 0.93 | 0.65 | -4.87 | -0.30 | -3.59 | -7.18 | -€3.31 | -€97.13 |

*Each town in a group shares costs with the other town(s) within the group for common Transmission Pipeline and AGI costs. Therefore, the NPV detailed against each town is dependent on the contribution from the remaining towns.

Appendix A - Terms of Reference

Below is a copy of the published Terms of Reference document (CER 06/125). The Phase II study has been completed according to the principles and methodology of this Terms of Reference, except where the latest published tariffs and Rate of Return are used and in the delivery timing of the overall report into a third Phase due to the high number of towns to be included.

Background:

For a town to be connected to the gas network, certain economic criteria need to be satisfied. This is to ensure that over a certain period the costs of connecting the town are paid for through the consumption of gas and the associated tariffs. In April 2006 a new connection policy was published (CER/06/032), setting out revised criteria for the connection of new towns. Where towns, under the old policy, were deemed to be uneconomic and therefore did not qualify for connection, under the new policy these towns may qualify under the new criteria. The purpose of this study is to evaluate the connection of towns under the new policy.

This report will examine individual towns and towns grouped on a geographic/regional basis, which currently are not connected to the gas network, to ascertain the feasibility from a gas economics perspective of connection under the new connection policy to the gas network and identify what towns, or groups of towns, qualify for connection and what towns do not.

A study on towns not connected to the gas network carried out for Bord Gáis Networks by DKM Economic Consultants in 2001 found most towns examined to be highly uneconomic in terms of gas connection, under the connection policy in operation at that time. The new connection policy is unlikely to make towns hitherto uneconomically viable but will improve the viability of towns that were already close to being economic.

The review will be carried out on a cost/benefit basis purely from a gas point of view.

Enquiries in relation to the process should be directed to Mark Holohan at Bord Gáis Networks, Block 2, Arena Road, Sandyford Business Park, Sandyford, Dublin 18. Tel: 01 602 1354, Fax: 01 602 1375, and email: newtowns@bge.ie.

Objectives;

The objective is to produce a report on the potential of extending the gas network to Towns not currently served within the criteria of the new Connections Policy.

Scope

- The scope will include a cost/ benefit analysis solely from a gas perspective.
- An evaluation of the likely loads will be produced.
- A high level engineering design analysis of the costs involved in developing an Engineering solution will be produced.
- An economic appraisal of costs versus revenues will be undertaken of potential towns identified.

Deliverables

- The first phase produced an analysis of the 16 potential towns selected along the Mayo/Galway pipeline corridor.
- The results of Phase I were published on the CER website in November 2006.
- The second phase, will take a further 9 months after phase one has been completed, and will address a further 20 towns currently not serviced by natural gas. A list of the Phase II towns will be published when confirmed.
- A final report will be produced at the end of the study, c. November 2007 incorporating the findings of both the first and second phase, and the remaining towns from the full published list. The report will outline what towns or groups of towns are viable within the new connection policy and which are not. Some of the towns from Phases I & II which were close to satisfying the economic criteria may be reassessed here.

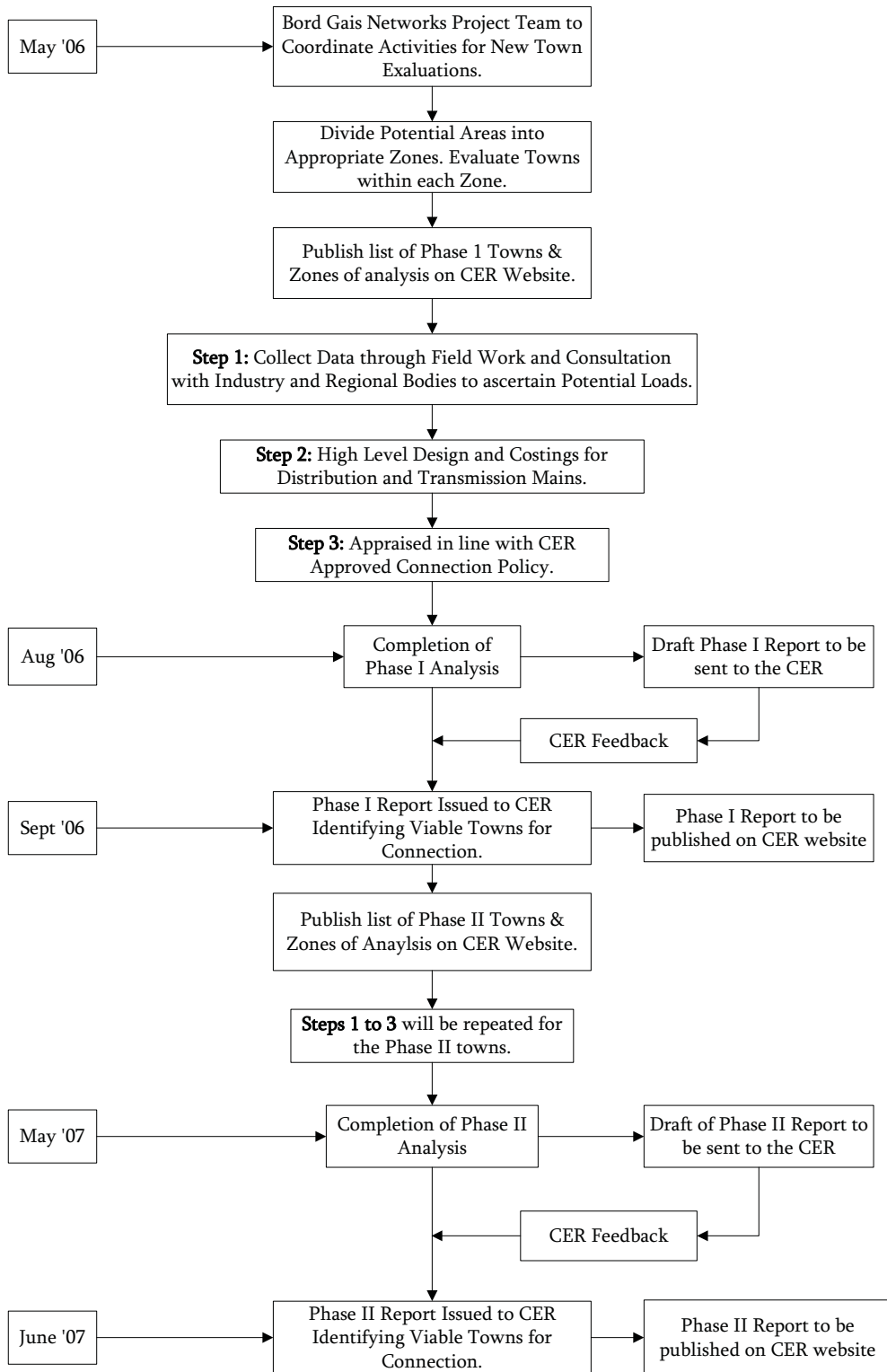
Methodology

- A project team will be set up within Bord Gáis Networks.
- The project team will produce a scope and programme plan.
- Management of the process and programme will be the responsibility of the project team.
- The project team will coordinate the activities associated with the delivery of a report.
- A geographic zonal approach will be taken where potential areas will be divided into appropriate zones, taking into consideration the National Spatial Strategy 2002-2020. Within each zone there will be number of towns or groups of towns that will be evaluated as part of the study.
- Data will be collected through fieldwork and consulting with industry and various regional bodies.
 - Field work will involve Bord Gáis representatives visiting each zone and gathering gas load information on towns within the zone through Local authority development plans etc and consulting with local industrial, commercial and new housing developers
 - In certain zones data is currently available on towns and this data will be validated.
- Towns within zones where a large amount of data already exists will be appraised in a first phase of the programme.
- Towns within zones where data has yet to be collected will be treated in the second phase of the programme, as it will take longer to collect the relevant data.

- Existing potential Industrial and Commercial loads and future new developments of domestic load will be considered.
- Outline designs and high level costings for a Distribution mains Network and a feeder main routing for each town will be produced. The associated Transmission mains and offtake requirements will also be designed and costed.
- The potential investments will be appraised, example attached, in line with the CER approved Connection Policy over a 25-year period and using Bord Gáis Networks' regulated rate of return. The appraisal will compare:
 - the present value of full pipeline and ancillary capital equipment (including AGI) costs and operating costs (both Transmission and Distribution) attributable to meeting the projected load. Capital costs include local authority charges associated with road openings. The present value of any attributable upstream (deep) reinforcement costs will also be included; and
 - the present value of, in all cases, 100% of distribution and transmission (entry and exit) tariff revenue attributable to the projected load.
- For the connection of a potential new town, or a regional group of new towns, to proceed, the present value of the revenues has to exceed the present value of the costs as determined in the economic appraisal.
- Following the analysis of potential towns further more detailed analysis will be carried out on towns that were initially close to satisfying the financial criteria whereby further consideration will be given to CSO data and town/county/regional development plans. These towns will be included in the Phase 2 final report.
- Towns may be grouped where they satisfy the following indicative criteria
 - a) Proximity of exit points from Transmission network – identify towns that are located close to and along the same section of Transmission pipeline;
 - b) Proximity of exit points from Distribution network - identify towns that are located close to and along the same section of Distribution main;
 - c) Identify towns with significant I&C loads and/or domestic load growth potential;
 - d) Identify towns that could be connected sharing the same Transmission and/or Distribution spur;
 - e) Determine towns that would be able to share the same operating costs (e.g. emergency response);
 - f) Evaluate selected towns individually taking into account any synergies identified above;
 - g) Towns with a positive NPV will be automatically included;
 - h) All other things being equal, towns with a negative NPV will be included in a descending order (with the town having the least negative NPV per additional therm being added first) as long as the total NPV of the group is positive (>0).
- On completion of Phase I an interim report will be forwarded to the CER outlining the analysis of those areas where detailed data is currently available. The final version of the Phase I report will be published on the CER website
- On completion of Phase 2, an interim report will be forwarded to the CER outlining the analysis of the 20 towns selected.
- A final report will be issued to the CER outlining the conclusions of the study, reiterating the findings of all phases and identifying which towns are viable for connection and which are not.

Fig 1. New Town Evaluation Process

The Terms of Reference for the New Town Evaluation Working Group Study are published on the CER Website.



New Town Appraisal Template – Example

| | | Year 0 | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 - 25 |
|---|------------------------|--|--------|--------|--------|--------|--------|--------|--------|-------------|
| 1. DEMAND | | | | | | | | | | |
| New Housing | | | | | | | | | | |
| No. Connections per yr up to Yr 10 | 200 | | | | | | | | | |
| Volume | 15,260 | kWh per house | | | | | | | | |
| Load Factor | 36% | | | | | | | | | |
| I&C (Surveyed Load in kWh) | | | | | | | | | | |
| Large | | | | | | | | | | |
| Capacity | | | | | | | | | | |
| Large 1 | 350,000 | | | | | | | | | |
| Large 2 | 35,000 | | | | | | | | | |
| Large 3 | 20,000 | | | | | | | | | |
| Commodity | | | | | | | | | | |
| Large 1 | 75,000,000 | | | | | | | | | |
| Large 2 | 7,500,000 | | | | | | | | | |
| Large 3 | 4,000,000 | | | | | | | | | |
| Take-up % | 80% | of the total load surveyed (approximately) - in this example 2 out of 3 | | | | | | | | |
| Large 1 | | 0% | 0% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Large 2 | | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Large 3 | | 0% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Medium | | | | | | | | | | |
| No. customers | 15 | | | | | | | | | |
| Total Capacity | 55,000 | | | | | | | | | |
| Total Commodity | 8,000,000 | | | | | | | | | |
| Take-up % | | 0% | 10% | 20% | 30% | 40% | 50% | 50% | 50% | 50% |
| Small | | | | | | | | | | |
| No. customers | 350,000 | | | | | | | | | |
| Total Capacity | 115,000 | | | | | | | | | |
| Total Commodity | 15,000,000 | | | | | | | | | |
| Take-up % | | 0.00% | 12.50% | 17.50% | 20.00% | 21.25% | 22.50% | 23.75% | 25.00% | 25.00% |
| 2. CONNECTION COSTS (CAPEX in €) | | | | | | | | | | |
| Distribution | | | | | | | | | | |
| Feeder & Distribution Main | 6,000,000 | | | | | | | | | |
| Service and Meter | | | | | | | | | | |
| New Housing | €1,086 | per connection | | | | | | | | |
| I&C | | | | | | | | | | |
| Large | €90,000 | for the loads assumed to be connected | | | | | | | | |
| Medium | €150,000 | for the total load surveyed (i.e. only the portion related to the take-up % will be included in the appraisal) | | | | | | | | |
| Small | €1,000,000 | for the total load surveyed (i.e. only the portion related to the take-up % will be included in the appraisal) | | | | | | | | |
| Transmission | | | | | | | | | | |
| AGI, etc. | €750,000 | | | | | | | | | |
| 3. CONNECTION CHARGES | | | | | | | | | | |
| New Housing | €220 | per connection | | | | | | | | |
| I&C | 30% | of service and meter costs | | | | | | | | |
| 4. OPERATING COSTS (OPEX) | | | | | | | | | | |
| Distribution | €140,000 | (incl. first response, callout crew and 3rd party damage) | | | | | | | | |
| Transmission | €11,000 | | | | | | | | | |
| 5. TARIFF | | | | | | | | | | |
| Distribution | | | | | | | | | | |
| | Capacity Charge | | | | | | | | | |
| | = A - B*Ln(PDV in MWh) | | | | | | | | | |
| Volume Range | A | B | | | | | | | | |
| 0-73 MWh | 133.333 | | | | | | | | | |
| >73-14,653 MWh | 118.032 | 3.432 | | | | | | | | |
| >14,653-57,000 MWh | 294.8852 | 42.3256 | | | | | | | | |
| >57,500 MWh | 36.3645 | - | | | | | | | | |
| | Commodity Charge | | | | | | | | | |
| | = A - B*Ln(PDV in MWh) | | | | | | | | | |
| Volume Range | A | B | | | | | | | | |
| 0-73 MWh | 0.2537 | | | | | | | | | |
| >73-14,653 MWh | 0.2025 | 0.0197 | | | | | | | | |
| >14,653-57,000 MWh | 0.2361 | 0.0311 | | | | | | | | |
| >57,500 MWh | 0.0461 | - | | | | | | | | |
| Transmission | | | | | | | | | | |
| Entry | | | | | | | | | | |
| Capacity | 336.727 | | | | | | | | | |
| Commodity | 0.139 | | | | | | | | | |
| Exit | | | | | | | | | | |
| Capacity | 481.879 | | | | | | | | | |
| Commodity | 0.220 | | | | | | | | | |

New Town Appraisal Template - Results Summary - Example

| | Year 0 | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 | Year 9 | Year 10 | Year 11 ... | Year 20 | Year 21 | Year 22 | Year 23 | Year 24 | Year 25 | |
|--------------------------------|---------------|--------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Demand (MWh) | | | | | | | | | | | | | | | | | | | |
| Capacity | | | | | | | | | | | | | | | | | | | |
| New Housing | 0 | 23 | 46 | 70 | 93 | 116 | 139 | 163 | 186 | 209 | 232 | 232 | 232 | 232 | 232 | 232 | 232 | 232 | 232 |
| Large I&C | 0 | 20 | 370 | 370 | 370 | 370 | 370 | 370 | 370 | 370 | 370 | 370 | 370 | 370 | 370 | 370 | 370 | 370 | 370 |
| Medium I&C | 0 | 6 | 11 | 17 | 22 | 28 | 28 | 28 | 28 | 28 | 28 | 28 | 28 | 28 | 28 | 28 | 28 | 28 | 28 |
| Small I&C | 0 | 14 | 20 | 23 | 24 | 26 | 27 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 |
| | 0 | 63 | 448 | 479 | 509 | 540 | 564 | 589 | 612 | 635 | 659 | 659 | 659 | 659 | 659 | 659 | 659 | 659 | 659 |
| Commodity | | | | | | | | | | | | | | | | | | | |
| New Housing | 0 | 3,052 | 6,104 | 9,156 | 12,208 | 15,260 | 18,312 | 21,364 | 24,416 | 27,468 | 30,520 | 30,520 | 30,520 | 30,520 | 30,520 | 30,520 | 30,520 | 30,520 | 30,520 |
| Large I&C | 0 | 4,000 | 79,000 | 79,000 | 79,000 | 79,000 | 79,000 | 79,000 | 79,000 | 79,000 | 79,000 | 79,000 | 79,000 | 79,000 | 79,000 | 79,000 | 79,000 | 79,000 | 79,000 |
| Medium I&C | 0 | 800 | 1,600 | 2,400 | 3,200 | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 |
| Small I&C | 0 | 1,875 | 2,625 | 3,000 | 3,188 | 3,375 | 3,563 | 3,750 | 3,750 | 3,750 | 3,750 | 3,750 | 3,750 | 3,750 | 3,750 | 3,750 | 3,750 | 3,750 | 3,750 |
| | 0 | 9,727 | 89,329 | 93,556 | 97,596 | 101,635 | 104,875 | 108,114 | 111,166 | 114,218 | 117,270 | 117,270 | 117,270 | 117,270 | 117,270 | 117,270 | 117,270 | 117,270 | 117,270 |
| <i>real prices, €000</i> | | | | | | | | | | | | | | | | | | | |
| Revenue | | | | | | | | | | | | | | | | | | | |
| Distribution | | | | | | | | | | | | | | | | | | | |
| Capacity | 0 | 38 | 425 | 440 | 456 | 472 | 480 | 489 | 497 | 506 | 514 | 514 | 514 | 514 | 514 | 514 | 514 | 514 | 514 |
| Commodity | 0 | 11 | 113 | 117 | 120 | 124 | 125 | 126 | 128 | 129 | 131 | 131 | 131 | 131 | 131 | 131 | 131 | 131 | 131 |
| Transmission | | | | | | | | | | | | | | | | | | | |
| Capacity | 0 | 52 | 366 | 392 | 417 | 442 | 462 | 482 | 501 | 520 | 539 | 539 | 539 | 539 | 539 | 539 | 539 | 539 | 539 |
| Commodity | 0 | 3 | 32 | 34 | 35 | 36 | 38 | 39 | 40 | 41 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 |
| Capex | | | | | | | | | | | | | | | | | | | |
| Distribution | -6,000 | -362 | -367 | -257 | -245 | -245 | -230 | -230 | -217 | -217 | -217 | -217 | -217 | -217 | -217 | -217 | -217 | -217 | -217 |
| Transmission | -750 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Connection Charges | | | | | | | | | | | | | | | | | | | |
| New Housing | 0 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 |
| I&C | 0 | 43 | 45 | 12 | 8 | 8 | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Opex | | | | | | | | | | | | | | | | | | | |
| Distribution | 0 | -140 | -140 | -140 | -140 | -140 | -140 | -140 | -140 | -140 | -140 | -140 | -140 | -140 | -140 | -140 | -140 | -140 | -140 |
| Transmission | 0 | -11 | -11 | -11 | -11 | -11 | -11 | -11 | -11 | -11 | -11 | -11 | -11 | -11 | -11 | -11 | -11 | -11 | -11 |
| Net Cash Flow | -6,750 | -321 | 507 | 631 | 685 | 730 | 772 | 803 | 842 | 872 | 902 | 1,075 | 1,075 | 1,075 | 1,075 | 1,075 | 1,075 | 1,075 | 1,075 |
| Net Present Value @ ROR | €3,790 | | | | | | | | | | | | | | | | | | |
| Note: | | | | | | | | | | | | | | | | | | | |

The figures presented are for illustrative purposes only

Appendix B - Population Growth Table

Population Growth in Prospective New Towns:

| Town | 2006 Census | Forecast Population 2018* | Forecast New Domestic Connections by 2018 |
|--------------|-------------|---------------------------|---|
| Cashel | 2413 | 6216 | 1140 |
| Cahir | 3381 | 5049 | 500 |
| Thurles | 6831 | 10167 | 1000 |
| Mountmellick | 2872 | 4540 | 500 |
| Mountrath | 1435 | 3103 | 500 |
| Abbeyleix | 1568 | 3236 | 500 |
| Monasterevin | 3649 | 8653 | 1500 |
| Youghal | 6393 | 13065 | 2000 |
| Dungarvan | 7813 | 14485 | 2000 |
| Wexford Town | 18163 | 34843 | 5000 |
| New Ross | 7709 | 9377 | 500 |
| Gorey | 7193 | 11196 | 1200 |
| Enniscorthy | 9538 | 13541 | 1200 |
| Loughrea | 4532 | 7868 | 1000 |
| Gort | 2734 | 5069 | 700 |

* Based on the average number of new housing connections per annum over a 12 year period times 2.78 persons per household plus the 2006 census figure.

Appendix C – Cumulative Projected Customer Numbers

| Town | 2011 | | 2014 | | 2018 | |
|--------------|---------------------------|-------------|---------------------------|-------------|---------------------------|-------------|
| | Industrial and Commercial | Housing | Industrial and Commercial | Housing | Industrial and Commercial | Housing |
| Cashel | 37 | 342 | 38 | 684 | 38 | 1140 |
| Cahir | 33 | 150 | 34 | 300 | 34 | 500 |
| Monasterevin | 21 | 450 | 21 | 900 | 21 | 1500 |
| Ballinrobe | 33 | 320 | 39 | 560 | 39 | 800 |
| Gort | 30 | 210 | 31 | 420 | 31 | 700 |
| Loughrea | 39 | 300 | 41 | 600 | 41 | 1000 |
| Total | 193 | 1772 | 204 | 3464 | 204 | 5640 |