

Sustainable energy – ground mounted solar PV project plan

1. Background

1.1. Council's vision

Within its Council Plan, Derbyshire County Council has set a clear commitment to reduce carbon emissions and develop the green technology sector. Under its commitment to develop “A safer Derbyshire”, there are several objectives to deliver sustainable and green communities and to support people in hard times, including to;

- Take a lead on mitigating against the impact of climate change;
- Explore ways of further reducing carbon emissions within the Council;
- Identify invest to save opportunities with renewable energy technologies;
- Work with county-wide partners to tackle fuel poverty.

1.2. Scrutiny Review

During 2013/14, the Improvement and Scrutiny Committee – Resources, undertook a review to investigate the work the Council is currently engaged upon in respect of sustainable energy projects and ascertain the viability of future projects on County Council owned land and property. In particular, the review aimed to explore the opportunities to reduce energy costs and generate income from sustainable energy projects at a time of severe budget reductions. The Scrutiny Review looked in detail at ground-mounted solar PV and identified that they're most suited to former industrial land, even contaminated land and land that is not required for housing or high grade agricultural land. It was therefore concluded that there are a number of potential opportunities for the County Council to promote sustainable energy projects, particularly large, ground-mounted solar PV and recommended that;

- The potential for large scale sustainable energy production on Council owned sites be thoroughly investigated, with viable projects being put forward for development following a rigorous assessment process.
- The assessments of potential projects are undertaken by a cross-departmental officer team.

1.3. APSE Energy

Derbyshire County Council have been members of APSE Energy since its launch in early 2014/15. APSE Energy aims to form an effective collaboration between local authorities to enable and facilitate the municipalisation of energy services, including local energy generation, distribution networks and delivery of energy efficiency works. In doing this, it is envisaged that:

- Social objectives will be addressed and community benefits delivered, such as a reduction in fuel poverty and increases in jobs and skills;
- Money will be saved and income generated to safeguard local services.

As a member of APSE Energy, the Council has access to a network of local authorities to share ideas and best practice and also benefits from technical, legal and finance consultancy through briefings and workshops.

1.4. Working group

The cross-departmental working group mentioned in section 1.2 has been informally established, with the following representatives;

Wayne Bexton	Principal Policy Officer	Chief Executives
Kathryn Warrington	Carbon and Energy Manager	CRD (Property)
Jo Hollick	Group Manager – Asset Management	CRD (Property)
Allison Thomas	Assistant Director	ETE
Richard Sandbach	Planner	ETE

Although initial conversations have taken place with finance, procurement and legal representatives, now that initial sites have been identified and work will be commencing on site specific feasibility and business case development, a formal meeting of the working group is required to include all representatives, which will be held in November and will include those identified above in addition to;

Peter Handford	Director of Finance	CRD (Finance)
John Cooper	Assistant Director, Finance	CRD (Finance)
Chris Woodhouse	Finance Manager (Procurement)	CRD (Finance)
Kay Riley	Assistant Director, Legal	CRD (Legal)

2. Progress update

2.1. Initial site identification

Following the Scrutiny Review, work was undertaken to start to identify council owned sites that may be suitable for large, ground-mounted solar PV installations. It was deemed that to identify the most commercially viable sites, a minimum land size of 2Ha would be set, which would be capable of accommodating 1MW of installed capacity. This stage identified 405 council owned sites above 2Ha, which were then considered on the basis of;

- Which department managed the site and its current use
- Whether the site is in vacant possession or whether it is tenanted, detailing the details of any tenancies in place including start date, end date, tenant and current rent.
- Flood risk
- Shape and topography

At the end of this stage, many were sites were discounted as they comprised of highways, school playing grounds, planted areas or were heavily sloped or irregularly shaped resulting in a list of 30 potential sites which were passed to planning for pre-planning comments. Based on national and local planning policy set in adopted and emerging Local Plans, 13 sites have been identified as being potentially feasible with 4 being less likely. A further 13 sites were discounted as the

installation of ground-mounted solar PV would be contrary to planning policy and would therefore not be feasible to pursue further.

A meeting has subsequently been held with the Distribution Network Operator (DNO), Western Power, to ascertain the viability of connecting any generation to the grid at the potential sites identified and whether there may be any constraints, along with what the potential connection costs may be. Once known, this will further help identify the most suitable sites.

2.2. Members consultation

This work has been and continues to be carried out in consultation with the Cabinet and Deputy Cabinet Member for Council Services. In addition, a Members' workshop was held in September to provide a strategic overview of the potential opportunities that investing in renewable energy presents and to understand Member priorities in terms of renewable technologies and financing arrangements. All Members present stated that ground-mounted solar PV is their initial priority but that all other opportunities should be explored and all were keen that there is community benefit resulting from the schemes. In addition, Members felt self-financing or joint financing with community shares would provide a more substantial investment opportunity rather than developing a joint venture with a solar developer whereby the council would only receive a land lease rental income. An overview of the financing options is provided in section 3.

Following the Members workshop, a drop in session was arranged for those Members whose areas have been identified in the initial site identification for ground-mounted solar PV to further ascertain any local issues that may inhibit the proposed developments. For those Members that could not attend, follow up meetings are being held.

The Scrutiny Committee continue to be updated through their feedback sessions.

2.3. Next steps

Whilst awaiting a response from the DNO regarding any generation connection constraints and potential connection costs, a consultants brief is being prepared to contract a consultant to undertake more detailed site and business case development, including a full finance appraisal. This will inform a Cabinet report to seek approval to progress any potential sites. A working group meeting is also required to update all cross-departmental representatives and commence discussions relating to financing, procurement and community energy arrangements. An overview gantt chart is attached.

3. Costs and financing

The Council is currently focusing its efforts to identify sites that would be suitable of accommodating a sub-5MW ground-mounted solar PV installation. This is primarily due to announced changes surrounding the Renewables Obligation, which if implemented, which they're likely to be, will see Renewable Obligation Certificates (ROCs) removed for schemes over 5MW and would instead need to rely on the Contracts for Difference (CfD). It is currently unclear whether there will be guaranteed financing through this

route and if so, how much. As sub-5MW solar PV installations qualify for the Feed in Tariff (FiT), it is suggested that this is what the Council focuses on.

For a typical 5MW scheme, average installation costs are £850k / MW installed, totalling around £4.25M, excluding any major grid infrastructure works. In addition there are Operating and Maintenance (O&M) costs at around £10k / MW installed. Internal Rate of Return (IRR) is estimated to be in the region of 8%.

As stated in section 2.3, detailed finance modelling is required, but in the meantime the information provided in sections 3.1 and 3.2 below provide an overview of the range of financing options and opportunities for income generation.

3.1. Financing options

There is a range of financing options that are available to local authorities to fund large scale renewable energy projects. These are briefly described below, but more detailed business case development is required to ascertain the most suitable option for Derbyshire County Council.

- **Land lease** – Through a developer led joint venture (JV), a private developer would undertake all feasibility and preliminary works at its own risk and would finance the installation. The landowner, in this case the council, would receive a rental income for the land. This provides the least risk to the council but also the least financial and social gains.
- **Self-finance** – Options exist for the council to self-finance large scale renewable projects on an invest to save basis, which could be through utilising reserves, public sector borrowing or through pension fund investment. However, the latter may prove more difficult as pension fund investments must be de-risked so any development must be installed and already generating and investment may not meet minimum investment requirements for pension funds.
- **Joint finance** – Opportunities for jointly investing in large scale renewables with local district and borough councils exist, which could be on projects on Derbyshire County Council owned land or similarly exploring land owned by the district and borough councils.
- **Crowd funding** – Encouraging community and individual investment in renewable energy development through crowd funding and solar bonds will engage local people in the planning process and development and will offer a guaranteed return on their investment.

3.2. Income opportunities

There are several ways in which the Council can generate an income from the generated electricity as briefly detailed below.

- **Feed in Tariff (FiT)** – the Council will receive FiT income for each unit of electricity generated and for each unit exported to the grid.

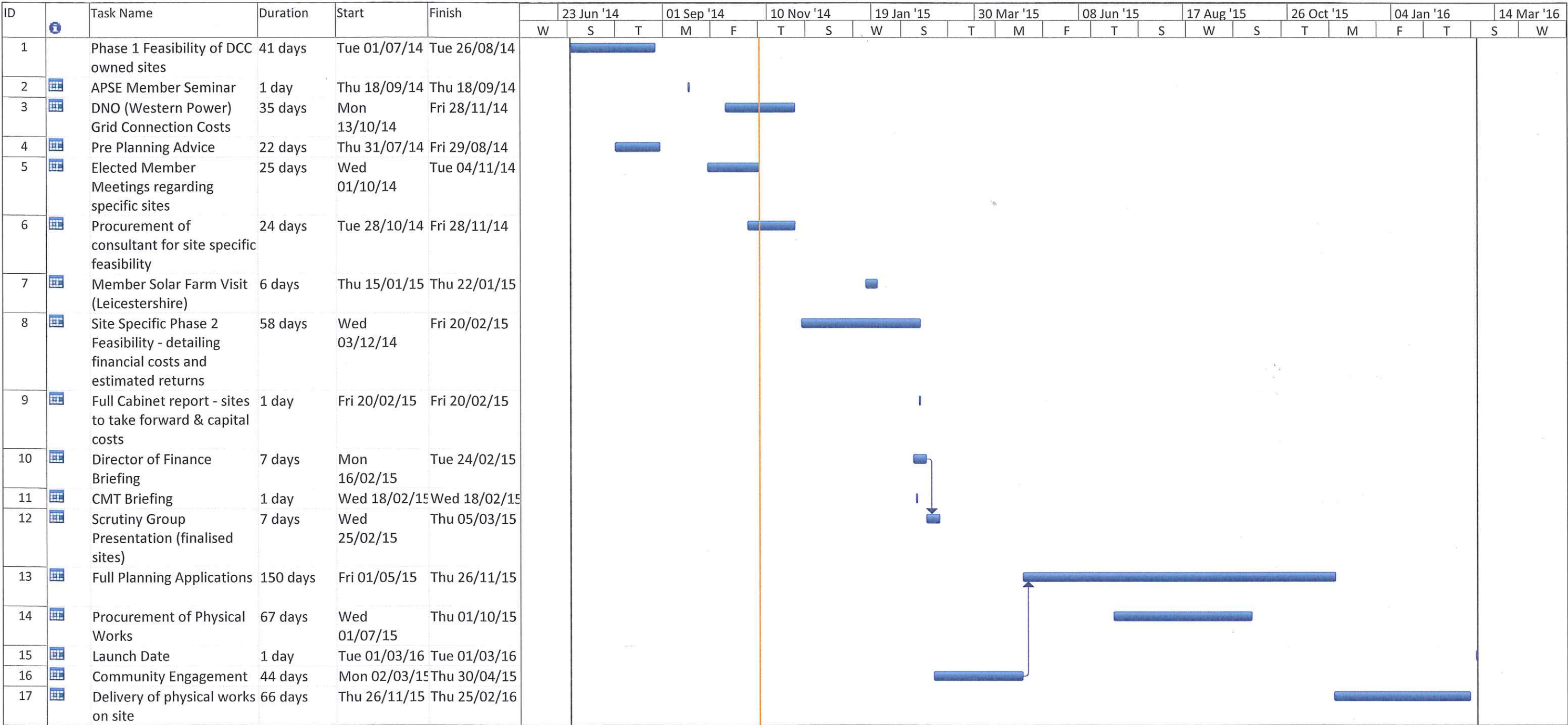
- **Private wire** – a private wire network is a privately owned and operated localised electricity network with the power produced being traded independent of the licenced transmission and distribution networks.
- **Power Purchase Agreements** – a PPA is a contract between two parties, one which generates electricity and one which purchases the generated electricity.
- **Supply to public** – to do this, the Council would need to become a licenced supplier, which is very costly. Alternatively, it could partner with a small utility company, such as OVO Energy to sell locally generated electricity to residents on a specific local tariff.
- **Sleeve into energy contract** – the generated electricity could be "sleeved" into the existing energy supply contract and pay for the transmission costs but not the commodity costs.

4. Energy Strategy

Whilst progressing potential large scale renewable energy opportunities, the Corporate Management Team and Members have also requested the ambitions and the opportunities available to the Council to be brought together under a Renewable Energy Strategy, which will document the Council's goals along with a route map to developing a range of renewable energy projects across the county.

5. Timetable

The attached gantt chart provides an overview of the work undertaken to date, the next steps and the timescales for this. A more detailed gantt chart detailing the development and potential installation works will be developed as part of the more detailed feasibility and business case development work. It is anticipated that from final feasibility to installation, any potential projects should take 12-18 months.



Project: Gantt Chart Solar PV Proj
Date: Wed 05/11/14

Task

Split

Milestone

Summary

Project Summary

External Tasks

External Milestone

Inactive Task

Inactive Milestone

Inactive Summary

Manual Task

Duration-only

Manual Summary Rollup

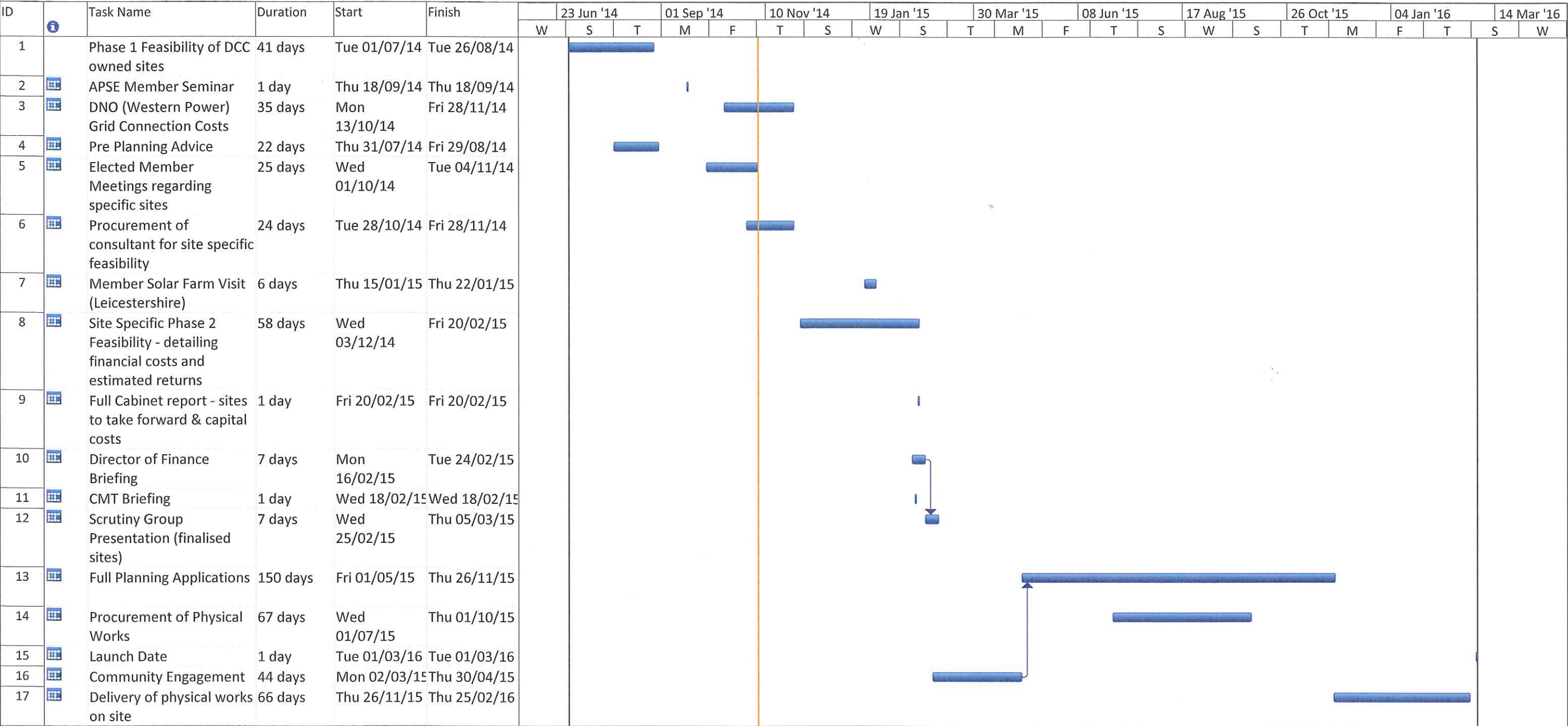
Manual Summary

Start-only

Finish-only

Deadline

Progress



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