



NOTTINGHAMSHIRE
Fire & Rescue Service
Creating Safer Communities

Nottinghamshire and City of Nottingham
Fire and Rescue Authority
Finance and Resources Committee

INVESTMENT IN SUSTAINABLE ENERGY

Report of the Chief Fire Officer

Agenda Item No:

Date: 09 December 2011

Purpose of Report:

To inform Members of changes to the business case assumptions as a result in a change of government policy and to seek approval for the project to continue.

To inform Members of the results of the tender for the provision of photovoltaic cells.

CONTACT OFFICER

Name : Neil Timms
Head of Finance and Resources

Tel : 0115 967 0880

Email : neil.timms@notts-fire.gov.uk

Media Enquiries Contact : Elisabeth Reeson
(0115) 967 5889 elisabeth.reeson@notts-fire.gov.uk

1. BACKGROUND

- 1.1 This report is to provide updated information and details of the changes to the original report submitted to the Finance and Resources Committee titled; Investment in Sustainable Energy Technologies and the associated Focus consultants report also presented to the same meeting. These changes are as a result of a recent government announcement regarding solar photovoltaic (PV) technologies.
- 1.2 The report briefly covers the proposed changes by the government in their Feed-in tariffs scheme titled: consultation on Comprehensive Review Phase 1 – tariffs for solar PV. The proposed changes to the existing scheme were announced by the government on 31st October 2011 and their document was made public at around the same time. The proposal in the government's document seeks to reduce the feed in tariff (FiT) rates that will be paid for the generation of electricity by PV technologies. The consultation document seeks to do this within the current financial year and will impact on the project that NFRS is currently undertaking.

2. REPORT

- 2.1 It seems the popularity of PV schemes for the generation of electrical power is becoming a higher than expected financial burden to the government both now, and over the predicted 25 year period of the scheme. To this end the government is looking to immediately reduce the tariff it will pay for PV schemes.
- 2.2 Their consultation document proposes that the reduction of the tariff will be applied to schemes registered from 12th December 2011; this means if enacted it will apply to the current NFRS project.
- 2.3 The tenders for the NFRS project were returned 25th November 2011 and the successful contractor is due to be appointed the week following 2nd December in order that they can achieve the project completion deadline by 31st March 2012. The PV installation can only be registered once complete.
- 2.4 The project to-date has committed expenditure in the region of £20k in planning, building control and other fees.

How the Proposals will affect the NFRS Project

- 2.5 The whole impact for schemes such as the NFRS project is explained in detail in the comprehensive review document; however the main effects to the current NFRS project are set out in the following paragraphs:
- 2.6 As the government is proposing to reduce the FiT before the end of the current financial year the rate NFRS will receive will be reduced from 32.9p per kWh to 15.2p per kWh. It is expected that the reduction in the FiT tariff

will only serve to extend the payback period of the installation and to impact on the revenue savings for energy expenditure each year. The proposed new rate will apply to the current financial year and is likely to reduce in future years although this has not been clearly indicated in the consultation document.

- 2.7 The original business case calculated payback and income based on the tariff of 32.9p per kWh and for the case of HQ NFRS the assumed payback would have been in the region of up to 10 years; this would now be extended to just over 12 years using the revised tariff rate and lower tender prices. The revised predicted payback for Highfields and Mansfield sites is expected to be circa 11 and 12 years respectively.
- 2.8 See attached Table with the tender prices from the interim assessment made to date. The tendered prices still need to be fully validated but at this point in time the leading tender price looks to provide excellent value.
- 2.9 The Feed in Tariff will be paid for a period of 25 years; however the PV panels are expected to last longer than this period and in some cases in excess of 30 years. The second aspect to take into consideration (again using the HQ figures in the revised Table) is that energy savings to the revenue budget will be made immediately and continue for the next 25 years. For the Headquarters this has been estimated at circa £9,300.00 in the first year (the FiT tariff + the savings made by not purchasing energy from the wholesale energy market), the tariff is due to be increased over the remaining term of 24 years by the rate of inflation each year.
- 2.10 If HQ, Stockhill, Highfields and the full installations at Mansfield or Service Development Centre were installed the total estimated saving from the first year's revenue budget would be in the region of £37,000 subject to the size of the PV array. As above this would continue over the remaining 24 years of the FiT scheme.
- 2.11 One other factor for consideration is the predicted increase in wholesale energy prices; this is the cost of the electricity we purchase from the energy suppliers. As the future electricity prices increase the greater the savings NFRS will make if generating its own electricity and again the potential for the payback periods of the installations are reduced. Generating electricity through the PV installations reduces the overall cost impact on NFRS from the future predicted wholesale energy price increases. The note on the attached Table (Note 2) demonstrates the potential impact of future electricity price increases.
- 2.12 The comprehensive review document includes a proposal to introduce a new multi-installation tariff rate for aggregating solar PV schemes. This means that there is a likelihood, if the proposal is accepted, that the total amount of PV electricity generated across the NFRS Estate will be assessed as a whole and the FiT paid on this basis. The problem this creates is that when aggregated, the total amount of power generated across the organisation, is assessed and would attract a reduced tariff.

- 2.13 As the proposed NFRS scheme as a whole is in excess of 150kWh the tariff would be reduced to 12.9p per kWh. This represents a 15% reduction from the 15.2 p per kWh if each site were assessed separately. This is proposed to come into effect 1st April 2012 and not backdated to December this year.

Summary

- 2.14 The government's decision to half the FiT through the comprehensive review document will impose a substantial reduction to the (previously published) level of feed in tariff payable for PV systems over the 25 year lifetime of the scheme. The reduction in the tariff is planned to come into effect in December 2011 and will impact on the NFRS Sustainable Energy Technology Project.
- 2.15 With regards to the previous business case submitted to the Finance and Resources Committee the reduction in the FiT would double the estimated payback period of the NFRS scheme from circa 10 – 11 years to 20 – 23 years. However the tender prices received to date have largely mitigated any excessive increase to the payback period of the project.
- 2.16 It is also worthy of note that the PV panels are expected to exceed the 25 years of the tariff payment scheme and could still be generating electricity for 30 years and beyond.
- 2.17 The savings based on the revised tariff to the NFRS annual revenue budget for energy from the installation of the PV is estimated at circa £37,000 per year; this is based on current energy prices and cost information.
- 2.18 The installation of these PV systems are time critical in order to avoid a further reduction in the proposed new tariff level (the level beyond 2012 is still to be confirmed) and to avoid the aggregation of the scheme across the NFRS Estate where the tariff would fall even further. The cut off date for the aggregation is 1st April 2012.
- 2.19 In order to provide the installer with the time necessary to complete the works before 31st March 2012 the contract must be awarded by 9th December 2011.
- 2.20 The fundamental reasons stated in the original report dated 23rd May 2011 are still valid; the only main changes are the estimated annual revenue savings to the energy budget and the payback period.
- 2.21 The payback period still occurs well within the term of the tariff period of 25 years as the impact of the tariff reduction has been offset by the tender prices received. The PV panels will last beyond the tariff payment period and continue to provide electrical power further strengthening the case for good value for money from the original investment in the project.
- 2.22 Generating electricity through PV will lessen the impact of future increase of wholesale energy prices to the NFRS annual budgets and provide NFRS with future sustainable energy.

3. FINANCIAL IMPLICATIONS

The financial implications are set out in full within this report. The business case is still viable and the investment will be met from Capital Grant funding and not borrowing as previously requested by Finance and Resources Committee.

4. HUMAN RESOURCES AND LEARNING AND DEVELOPMENT IMPLICATIONS

There are no human resources and learning and development implications arising directly from this report.

5. EQUALITIES IMPLICATIONS

There are no impacts on equalities arising from this report.

6. CRIME AND DISORDER IMPLICATIONS

There are no crime and disorder implications arising from this report.

7. LEGAL IMPLICATIONS

There are no legal implications arising directly from this report.

8. RISK MANAGEMENT IMPLICATIONS

- 8.1 No capital project is without risks that need to be managed however these can be managed by effective project management.
- 8.2 There are inherent risks in relying for a business case on government declared tariffs as these can be changed. It is considered unlikely however that once implemented the tariffs will be altered however the underlying success of this project comes from the generation of electricity and not specifically from the tariff benefits.

9. RECOMMENDATIONS

- 9.1 That the current project continues as planned accepting the proposed reduction in the tariff to realise the savings to future revenue budgets.
- 9.2 That subject to the above the contract is awarded on or immediately following 9th December 2011 in order that the project can be completed by the 31st March 2012 deadline.

10. BACKGROUND PAPERS FOR INSPECTION (OTHER THAN PUBLISHED DOCUMENTS)

- Feed-in tariffs scheme: consultation on Comprehensive Review Phase 1 – tariffs for solar PV.

Frank Swann
CHIEF FIRE OFFICER

Payback period and FIT/RHI Income by Station and Tenderer

Station/Building	Tenderer	Item	kWh Output (Kwh/annum)	Tendered Price *5	Contingency Sum 5%	FIT Estimated Income based upon 15.2p per kWh *3	Life Cycle Costs (annual maintenance)	Estimated Energy Savings (£) *2	Estimated Payback Period (Years)	Total Estimated FIT/RHI Income proposed pre-march 2012 install
NFRS HQ	Tender 1	Photovoltaic's 47.5 kWp array	35625	£170,984.80	£8,549.24	£5,415.00	400	£2,992.50	21.35	£135,375.00
NFRS HQ	Tender 2	Photovoltaic's 10.00 kWp array	7864	£28,500.00	£1,425.00	£1,195.33	400	£660.58	16.12	£29,883.20
NFRS HQ	Tender 2 (Alternative Submission)	Photovoltaic's 50.00 kWp array *4	39479	£111,900.00	£5,595.00	£6,000.81	400	£3,316.24	12.61	£150,020.20
NFRS HQ	Tender 3	Photovoltaic's 25.20 kWp array	18900	£100,271.75	£5,013.59	£2,872.80	400	£1,587.60	23.60	£71,820.00
Stock hill	Tender 1	Photovoltaic's 28.80 kWp array	21600	£107,520.00	£5,376.00	£3,283.20	400	£1,814.40	22.15	£82,080.00
Stock hill	Tender 2	Photovoltaic's 50.00 kWp array	39479	£111,900.00	£5,595.00	£6,000.81	400	£3,316.24	12.61	£150,020.20
Stock hill	Tender 3	Photovoltaic's 16.56 kWp array	12412	£65,244.00	£3,262.20	£1,886.62	400	£1,042.61	23.39	£47,165.60
Highfields	Tender 1	Photovoltaic's 40.32 kWp array	30240	£151,737.60	£7,586.88	£4,596.48	400	£2,540.16	22.32	£114,912.00
Highfields	Tender 2	Photovoltaic's 50.00 kWp array	39320	£97,500.00	£4,875.00	£5,976.64	400	£3,302.88	11.03	£149,416.00
Highfields	Tender 3	Photovoltaic's 24.00 kWp array	18000	£77,179.97	£3,859.00	£2,736.00	400	£1,512.00	19.08	£68,400.00
Mansfield	Tender 1	Photovoltaic's 46.56 kWp array	34920	£203,134.40	£10,156.72	£5,307.84	400	£2,933.28	25.88	£132,696.00
Mansfield	Tender 2	Photovoltaic's 39.50 kWp array	30447	£78,605.00	£3,930.25	£4,627.94	400	£2,557.55	11.49	£115,698.60
Mansfield	Tender 3	Photovoltaic's 26.16 kWp array	19620	£106,832.46	£5,341.62	£2,982.24	400	£1,648.08	24.23	£74,556.00
SDC Ollerton	Tender 1	Photovoltaic's 21.84 kWp array	16380	£75,667.20	£3,783.36	£2,489.76	200	£1,375.92	20.55	£62,244.00
SDC Ollerton	Tender 2	Photovoltaic's 17.25 kWp array	14021	£39,675.00	£1,983.75	£2,131.19	200	£1,177.76	12.59	£53,279.80
SDC Ollerton	Tender 3	Photovoltaic's 22.56 kWp array	16920	£77,034.17	£3,851.71	£2,571.84	200	£1,421.28	20.26	£64,296.00

1

Projected kWh production is based upon estimated 750kWh per kWp

2

Estimated energy savings based upon 0.12p/kWh and assumes a conversion of 70% of energy produced by the PV is used within the building through management procedures
Note: As an example on Mansfield if energy prices rise by 50% in the next five years the payback period for the installation will be reduced to 10.24 years on Tender 2.

3

This is the consultation FIT rate for system size and is yet to be confirmed

4

Tenderer 2 has confirmed an alteranitve proposal to achieve a 50 kWp installation at the HQ site, this is currently based upon their 50 kWp installation at Stockhill

5

We continue to receive tender return information from the 3 tenderers which could impact upon the figures currently used here for returns.