CABINET – 15TH FEBRUARY 2017

SUBJECT: **CARBON REDUCTION INITIATIVES CAPITAL ALLOCATION**

REPORT BY: **CORPORATE DIRECTOR, SOCIAL SERVICES**

1. PURPOSE OF REPORT

1.1 To seek Cabinet approval for capital budget allocation for carbon reduction initiatives to increase the provision of solar panels at schools and to pilot the use of electric vehicles for Council business.

2. SUMMARY

2.1 The Budget Proposals 2016/17 and Medium Term Financial Strategy 2016/2021 report which was considered by Full Council on the 24th February 2016 recommended an allocation of £215,000 for carbon reduction initiatives. This report seeks approval to allocate £100,000 to install solar photo voltaic (PV) systems on 20 schools in the county borough in 2017/18 and to allocate a further £4,000 to install electric vehicle charging points at Penallta House and at Tir-y-Berth Depot. It is proposed that electric vehicles would be trialled in Countryside and also in the Meals Direct meals on wheels service, together with the provision of an electric pool vehicle.

3. LINKS TO STRATEGY

3.1 Green and renewable energy supports the Greener, Healthier, Prosperous, and Learning Caerphilly themes within the single integrated plan, Caerphilly Delivers and also contributes to following Well-being Goals within the Well-being of Future Generations Act (Wales) 2015:

- A prosperous Wales
- A resilient Wales
- A healthier Wales
- A more equal Wales
- A Wales of cohesive communities
- A globally responsible Wales

4. THE REPORT

4.1 The Budget Proposals 2016/17 and Medium Term Financial Strategy 2016/2021 report which was considered by Full Council on the 24th February 2016 recommended a one-off match funding allocation of £215,000 to be set aside and held Corporately for carbon reduction initiatives.

4.2 **Install Solar Panels - Photo Voltaic (PV) systems on schools**

The Authority has implemented a number of photo voltaic PV schemes across its corporate buildings. This includes corporate offices and most recently care homes. Since 2009 there has been a programme of installing small (4kW) PV systems on schools linked to education and awareness work promoting renewable energy and energy efficiency. To date systems have been installed on 21 schools.

4.2.2 The proposal for 2017/18 is to install solar PV systems on 20 schools in the county borough. It is anticipated, based on a recent tender that the systems would cost around £5,000 per school, giving a total cost of £100,000. £12,000 of these costs would be internal fees for CDM regulations. When installed, the systems will save around £8,000 per year in school electricity costs which can be reflected in a change to the energy formula used in the funding to schools.

4.2.3 This cost does not include any asbestos surveys (if required), or additional costs due to different types of school roofs. Based on our current installation prices, flat roofs cost approximately £4,500 and pitched roofs approximately £5,000. The proposed costs have been calculated using the higher figure for pitched roofs. As a result of the recent reduction in the Feed in Tariff (FIT) this would not be claimed and so there would not be a requirement for schools or school roofs to have a 25 year life span. The solar PV systems could be moved onto new school buildings if necessary.

4.2.4 The most suitable schools will be chosen having regard to the following criteria:

- The life of the building (although we do have the opportunity to relocate the system to another school)
- The suitability of the school (roof structure, orientation of building, shading)
- Asbestos issues
- Listed Buildings

4.2.5 Each school would generate approximately 3,196KWh of electricity per year and save approximately £400 a year on electricity costs. This would be a total saving of approximately £8,000 per year for the 20 school installations from the schools' electricity bills. The payback period for the PV systems would be 12.5 years:

	PV System Cost	Energy Savings per year	Payback
Cost per school	£5,000	£400	12.5 years
Cost of 20 schools	£100,000	£8,000	12.5 years

4.2.6 Each school has a CO2 saving of approximately 1.9 tonnes per year. Installing PV systems on 20 schools would save approximately 38.0 tonnes of CO2 per year. The solar PV systems would raise awareness and understanding of renewable technology and energy efficiency. Each school would be linked up to the Orsis portal (a web based monitoring system for solar PV systems). The schools could use the Orsis portal to incorporate renewable energy data from the panels into their curriculum work. The systems would support the schools Eco School work under the Eco School Energy topic area. The project would make a statement about the authority's commitment to sustainable development, renewable technology and energy efficiency as part of our work for the Well-being of Future Generations Act.

4.3 Electric Vehicles

4.3.1 For an annual mileage of around 10,000 miles, switching from a conventional vehicle to an electric vehicle would save around £800 in fuel costs alone. It is proposed to install electric vehicle charging points at Penallta House and Tir-y-Berth Depot and to lease 2 electric

vehicles within each of Meals on Wheels and Countryside together with an electric Pool car for staff use. The vehicles would be leased on a 3 year basis allowing the authority to take advantage of ongoing improvements to electric vehicle technology in a few years time.

4.3.2 A charging box will be installed at the rear of Penallta house and at Tir-y-Berth Depot, they could charge up to 4 or 5 vehicles at any time, on a slow charge, best suited to 6-8 hours overnight providing for approximately 100 miles on one charge, according to the manufacturers. The cost to install a charging box unit is approximately £1,000 to £2,000. Service areas will continue to meet the lease costs as they will simply be replacing existing vehicles. The lease cost for the pool vehicle (£11,010 over 3 years) has been included in the total cost of the proposal. Charging costs per vehicle is approximately 2p per mile. Based on figures provided by the 2 service areas annual fuel cost savings on existing diesel usage are approximately £800 per vehicle. In addition there is a total annual saving of £580 on Road Tax. There is a total projected saving of £3,780 per year on the 4 vehicles.

4.3.3 It is also proposed to lease an electric vehicle for pool car use to allow other service areas the opportunity to participate in this project. The annual lease cost is £3,670 which is £11,010 over 3 years. There will also be maintenance/tyre replacement costs and any damage repair costs, plus a Fleet Management Charge (FMC) for twice yearly safety inspections. Based on the pool vehicle undertaking 50 miles a day, 5 days a week, 52 weeks of the year, the annual costs would be:

Fuel £260
Annual lease £3,670
FMC Safety Inspection costs £800
Maintenance/Tyre costs £800
Total cost £5,530 per year

The mileage payment for the same journeys made by staff using their own vehicles would equate to £5,850 per year, resulting in a saving of approximately £320 per year. The saving will be less if the pool vehicle is not fully utilised, but this proposal will also allow the Authority to trial the pool car concept as well as enabling a wider range of services to consider the suitability of electric vehicles for their own use.

4.3.4 It should be noted that using electric vehicles charged at our buildings will effectively transfer vehicle fuel carbon emissions onto corporate buildings emissions and to the resulting bills and Carbon Reduction Commitment costs. Penallta House uses approximately 1.9GW of energy per year. Charging an electric vehicle 5 times a week, 52 weeks a year, would use approximately 5,200kW of energy (0.0052GW). This is 0.27% of the total energy usage of Penallta House. This does not have a significant impact on our energy usage, so should not have a significant impact on where we are in the DEC energy use league table. Although small, the cumulative effect will need to be considered. At 0.27% based on the savings identified from fuel costs, the savings more than pay for the small amount of carbon emissions.

4.3.5 The project would make a statement about the Authority's commitment to sustainable development and electric vehicles as part of our work for the Well-being of Future Generations Act. The one-off cost of installing 2 charging points is up to £4000 and therefore the payback period is less than 9 months. The total net annual saving on this proposed 5 vehicle project is £3,872.50:

	Additional Lease & FMC Cost/ Year	Electric Fuel Cost	Standard Fuel Cost/ mileage payment	Annual Road Tax saving	Saving on Payments per year	Annual Carbon Emission Cost	Total Annual Saving
Meals on Wheels & Countryside (Total 4 vehicles)	N/A	£800	£4,000	£580	£3,780	£182*	£3,598
Pool Vehicle (1 vehicle, at 50 miles a day)	£5,270	£260	£5,850	N/A	£320	£45.50*	£274.50
Total	£5,270	£1,060	£9,850	£580	£4,100	£227.50*	**£3,872.50**

* Carbon Emission Cost £45.50 per year (2,740kg per year)for Authority based on 260 full charges per vehicle (5 full charges per week for 52 weeks of the year) and 26,000 miles (100 miles for each full charge). Total of £227.50 (13,700kg) for 5 vehicles.

4.3.6 The project will involve more than one model of vehicle allowing the merits of different vehicle types to be assessed. Additional electric vehicles and charging points can be considered if it is clear that there are benefits in doing so as the project progresses.

4.3.7 Should the capital budget allocation be approved the detailed proposals in relation to taking forward both projects will be presented to the Future Generations Advisory Panel for their comment.

5. WELL-BEING OF FUTURE GENERATIONS

5.1 Renewable energy initiatives contribute to the Well-being Goals as set out in Links to Strategy above and contribute to a number of the Council's objectives. In particular they contribute to a Globally Responsible Wales reducing the activities that promote climate change and noting that climate change itself has been identified as a risk within the Corporate Risk Register. Similarly they support a resilient Wales and offer a long term source of energy when other non-renewable sources have become depleted. Renewable energy schemes reduce or remove emissions to air arising from carbon based energy sources and therefore promotes a Healthier Wales. They can also support a Prosperous Wales by reducing the financial cost of energy and longer term offer opportunities for employment through the growth of the renewable energy sector within the county borough.

5.2 Renewable energy schemes are consistent with the five ways of working as defined within the sustainable development principle in the Act in that they are a long term measure capable of providing energy that will sustain into future generations. The projects under consideration will support the development of an infrastructure which will prevent the on-going reliance on carbon based fuels in the future. They also provide opportunities to involve our communities in the development and use of renewable energy, and to collaborate with schools and other sectors.

6. EQUALITIES IMPLICATIONS

6.1 No Equalities Impact Assessment has been undertaken in relation to this report, however Sustainable Development and Equalities interact on many levels and work carried out in one area often supports the other. Creating sustainable communities, employment and transport for example, is of benefit to all the residents of Caerphilly county borough, regardless of their individual circumstances or backgrounds.

7. FINANCIAL IMPLICATIONS

7.1 The Budget Proposals 2016/17 and Medium Term Financial Strategy 2016/2021 report that was considered by Full Council on the 24th February 2016 recommended a one-off match funding allocation of £215,000 to be set aside and held Corporately for carbon reduction initiatives. This report proposes to seek Cabinet approval for an initial £104,000 allocation to fund the solar PV installations and electric vehicle charging points. A Revenue Contribution to Capital Outlay (RCCO) for £104,000 is therefore required to be transferred from the Miscellaneous Finance budget to Capital to fund the carbon reduction initiative scheme.

8. PERSONNEL IMPLICATIONS

8.1 A Policy Officer within the Corporate Policy Team currently oversees a programme of activity in relation to Education for Sustainable Development and the proposal to install additional PV systems on schools will be accommodated within this existing staffing resource. Likewise, the electric vehicles pilot will be administered within existing staffing resources in the Corporate Policy Team.

9. CONSULTATIONS

9.1 This report has been sent to the Consultees listed below and all comments received are reflected in this report.

10. RECOMMENDATIONS

10.1 That Cabinet:

(i) Approve a Revenue Contribution to Capital Outlay (RCCO) from the Miscellaneous Finance budget to fund capital works of £100,000 to install Photo Voltaic (PV) systems of up to 4Kw on 20 schools in the Caerphilly County Borough.

(ii) Approve a Revenue Contribution to Capital Outlay (RCCO) from the Miscellaneous Finance budget to fund capital works of £4,000 to install electric vehicle charging points at Penallta House and Tir-y-Berth Depot.

11. REASONS FOR THE RECOMMENDATIONS

11.1 To reduce carbon emissions.

11.2 To assess the use of electric vehicles.

11.3 To develop further the Council's commitment to renewable energy, sustainable development and the well-being of future generations.

Author:	Rob Hartshorn, Head of Public Protection
Consultees:	Cllr Ken James Cabinet Member for Regeneration, Planning & Sustainable Development Cllr Nigel George, Cabinet Member for Community & Leisure Cllr Derek Havard, Cabinet Member for Education Dave Street, Corporate Director, Social Services Gail Williams, Interim Head of Legal & Democratic Services Colin Jones, Head of Performance and Property Steve Harris, Interim Head of Corporate Finance Paul Cooke, Senior Policy Officer Paul Rossiter, Energy & Water Officer Tracy Evans, Policy Officer Kath Peters, Corporate Policy Manager Bleddyn Hopkins, Assistant Director, Education Mark S. Williams, Head of Communities & Leisure Mary Powell, Fleet Manager Marcia Lewis, Catering Manager Sue Richards, Principal Finance Officer, Education Phil Griffiths, Principal Planning Officer Nadeem Akhtar, Group Accountant, Corporate Services Anwen Rees, Senior Policy Officer (Equalities and Welsh Language) Shaun Watkins, HR Manager

Background Papers: Report to Full Council on the 24th February 2016 ‘Budget Proposals 2016/17 and Medium Term Financial Strategy 2016/2021’