



**tresoc** TOTNES RENEWABLE  
ENERGY SOCIETY

# HYDRO & SOLAR ROOFS SHARE ISSUE 2014

COMMUNITY ENERGY, RAIN OR SHINE



PICTURED

**TRESOC's 2011 project:  
NHS Leatside Surgery  
roof-mounted solar PV**

Electricity bills down by 20%

**Sowton Weir Hydro**

Already generating electricity  
with increases in migratory  
fish population.

# PROSPECTUS



**tresoc** TOTNES RENEWABLE  
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# HYDRO & SOLAR ROOFS SHARE ISSUE 2014

COMMUNITY ENERGY, RAIN OR SHINE

## THE SHARE ISSUE OFFER

- Between 500,000 to 1,500,000 shares at £1 per share
- Minimum shareholding: £20
- Offer opens: Thursday, 22nd May, 2014 at 7:00pm
- Offer remains open until further notice given

This Prospectus for the Sale of Membership in the Totnes Renewable Energy Society outlines an opportunity to invest in TRESOC, an Industrial & Provident Society developing renewable energy resources for the benefit of the community. It is an invitation to take part in shaping our sustainable energy future, with secure, low risk investments in local solar and hydropower projects in community ownership. It explains the unique opportunity presented by TRESOC and the benefits and risks involved in investing. It is prepared in good faith by the Directors of the Society with the interests of all members of the community centered in Totnes and the surrounding area.

## Enquiries

Please contact the Totnes Renewable Energy Society for further information relating to this Share Issue.

Email: [admin@tresoc.co.uk](mailto:admin@tresoc.co.uk)

Telephone: 01803 867431

Website: [www.tresoc.co.uk](http://www.tresoc.co.uk)

Totnes Renewable Energy Society (TRESOC)

Registered in 2007 as an Industrial Provident Society with the Financial Services Authority in England and Wales under the Industrial Provident and Provident Societies Act (no. 30373R)

# THANK YOU FOR CONSIDERING COMMUNITY INVESTMENT

The TRESOC Board, in consultation with Members, presents the 2014 Hydro & Solar Roofs Share Issue. This document represents more than 4,000 volunteer hours dedicated to developing a portfolio of clean energy projects. It describes the opportunity for investment of up to £1.5 million into our six hydro and roof-mounted solar PV projects, offering a collective return of £136,000 per year over 20 to 30 years.

Success in raising this sum will enable the Society to cover its modest operating cost, continuing our evolution into a “New Economy” organisation, educating and attracting local, skilled people alongside developing further Community Energy projects. It will also allow us begin to pay dividends to members, old and new.

This Prospectus has been prepared by the Totnes Renewable Energy Society and its Directors, who are responsible for the contents. The Offer is published in accordance with the Financial Services and Markets Act 2000 and has been approved for the purposes of Section 21 of that Act. The Prospectus includes an Application Form insert, which may be returned as an application for Offer Shares.



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### Important notes

- 1) Previous TRESOC Share Issues have restricted membership to the community resident in Totnes and 15 surrounding parishes. The Board proposed a change to the Society’s Rules to open membership of the Society to everyone to help ensure success in raising investment capital and remove boundaries to future project development. The amendment to the Rules was approved unanimously by members at a Special General Meeting on 22nd May. Membership of TRESOC is now open to everyone.
- 2) Profits from sales of locally generated energy are expected to increase in line with the RPI and rising global energy prices, although you should take note that energy prices can fall as well as rise.
- 3) Neither Totnes Renewable Energy Society nor any of its Directors can provide investment advice, tax advice or recommendations to Investors.

# THE TRESOC STORY

The Totnes Renewable Energy Society was formed in November 2007 by a group of committed individuals with the purpose of developing the renewable energy resources of the area under the ownership and control of the local community.

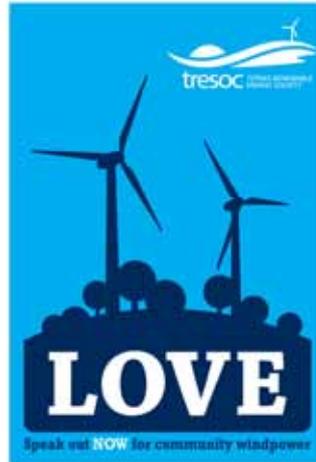
TRESOC is a registered Industrial and Provident Society aiming to develop strategic renewable energy projects in partnership with technology providers, offering the opportunity for investment and participation in the ownership and control of these resources to everyone. Our goal is to empower the community centred in Totnes to take a leading role in the commercial development of local renewable energy resources.

## Achievements

In 2012 and 2013, TRESOC completed two very successful rooftop solar projects, managing the entire process from initial conversation through to installation, including legal work. Follaton Community Centre will be saving £1,000 per year and at the NHS's Leatside GP Surgery, electricity bills are down by 20%. With 14,000+ registered patients, the savings gained for the surgery can be channelled into patient care. In addition to the surgery's electricity bill saving, TRESOC members' investment of £39,000 is earning a return of around 9% over the 20 year lifespan of the project through Feed-in-Tariff payments on all electricity generated by the panels, regardless of whether its used by the surgery or exported to the grid, plus a deemed export. Looking to the future, Leatside's Strategic Business Manager Janine Payne said, "We look forward to seeing the panels generate savings for Leatside Surgery over the years to come."



Leatside Surgery GPs and staff, MP Sarah Wollaston and the team from TRESOC and Yolk Solar on launch day



Back in 2007, the TRESOC Board secured an agreement to proceed with the Totnes Community Wind Farm (TCWF) with a commercial partner, Infinergy, who provided the expertise and development capital for preparation and submission of the planning application. On the basis of this agreement TRESOC gained 500 members and raised £175,000 through two share issues in 2010 and 2011. TCWF, with 2 x 2.3 MW wind turbines, was a £6.5m project which would have provided enough renewable electricity to power 2,500 homes. However, the planning application was rejected and Infinergy decided, in August 2013, that the cost and risk of appeal was too great.

Jonathan Porritt of Forum for the Future described the project as "one of the most well-designed and well-supported we've ever seen."

Following the loss of the TCWF, the Board has worked to secure a £1.5m portfolio of local, lower risk solar roofs and hydro projects, suitable for immediate investment.

Many of our accomplishments have not manifested as projects. Many hours have gone into business development, awareness-raising, member outreach, events, exhibitions, advocacy, presentations and talks. TRESOC has forged new ground, which, by definition, carries risks and beneficial outcomes are not immediate; building awareness takes time. We understand that this is a long-term commitment, and through this effort we have developed as a strong, committed and capable team. Here are some of our achievements:

- The Great Wind Debate at Dartington Hall opened up the windpower discussion, with a panel of experts and Jonathan Dimbleby chairing.
- Researching the possibility for river/tidal energy at the Anchor Stone Channel has resulted in a collaborative relationship with Plymouth University and a thesis project for MSc students, the next generation of renewables champions.
- Several members of the Board are RegenSW Community Energy Champions.
- We are now in active negotiation with South Hams District Council with a view to realising the potential of renewable energy assets through local community investment.
- And let's not forget our advocacy work up at Westminster, talks, presentations, DECC working groups and participation in a community energy summit meeting with Ed Davey.

# BECOME A TRESOC MEMBER TO INVEST & BENEFIT

## THE BENEFITS OF JOINING

### Democratic mandate

The issue of shares has been prepared in order to be accessible to all members of the community, irrespective of your economic circumstance or whether you normally engage in financial investments. All members, regardless of the size of their investment, have equal voting rights in determining how their local renewable energy resources are developed and managed.

### Membership of the society

- Membership is open to everyone
- There is a single class of shares with a nominal value of £1
- A Member of the Society must have a minimum number of 20 shares
- All Members of the Totnes Renewable Energy Society have one vote regardless of how many shares they hold
- No Member may hold more than 100,000 shares, unless the Member is another Industrial and Provident Society
- The Board is elected by the Members

### TRESOC members benefit from:

- gaining an equal vote in how the Society is managed and how local energy resources are utilised and conserved
- enabling the community to participate in the ownership and management of renewable energy resources
- being eligible for a variable interest payment, based on the performance of TRESOC
- developing a local energy supply offering protection against fluctuations in international energy markets
- enhancing the contribution of the community centred in Totnes and the surrounding area in dealing with global climate change
- contributing to the provision of local renewable energy supplies to build long-term prosperity and economic security
- demonstrating a working model of community ownership that can be replicated across the UK

### TRESOC customers (people we might provide energy to) will benefit from:

- lowering their energy bills and protection from energy price fluctuations
- lowering their carbon footprint
- supporting the development of community energy

## WHO WE ARE

### Ian Bright, Managing Director



With a background in Forestry and Public Service, Ian co-founded TRESOC in 2007 and has worked tirelessly since, campaigning at local and national level to pave the way for Community Energy, and in pursuing the many opportunities for local renewables working with technology providers and stakeholders.

### Mandy Burton, Director of Engineering



Mandy's background is in Mechanical Engineering and project management. She is committed to seeing what can be done on a local scale to address our energy needs into the future, while building a resilient local economy.

### Jane Brady, Communications Director



Jane has over twenty years of communications experience for both for- and non-profit organisations worldwide. Developing coalitions of support for local efforts, enthusiasm for share offers and engagement with higher-level policy puts her work with TRESOC on the front-line of a challenging sector, Community Energy.

### Paul Pizzala, Financial Director



Paul has a background in investment management. After a 15-year career, he decided to explore other ways of investing, inspired by the idea of soil, soul and society – a triple bottom line for planet, people and profits. Paul completed an MSc in Holistic Science from Schumacher College in 2012 and is putting into practice his interest in social capital, bringing a clear vision for a financially sustainable organisation.

### Owen Hill, Legal Director



Owen is a business solicitor with commercial experience in both private practice and the construction and property development industry. He lives in Dartmouth and acts as a Consultant to the South Devon Law Firm of Wollen Michelmore.

### Steve Munday, Planning Director



Steve worked in Local Government as a town planner for nearly 30 years for a number of Local Authorities, including South Hams District Council, before setting up his own consultancy practice in 2011. Steve believes in communities taking responsibility for the energy they consume and in doing their bit to promote sustainable and renewable sources of energy production.

# A NEW WAY TO INVEST

In our view, a social and financial dividend should go hand in hand.

We encourage you to view an investment in TRESOC as a social as well as financial investment. We believe renewable sources of energy are required to address the twin challenges of climate change and energy security threatening the wellbeing of every community. TRESOC helps residents and communities to shape the renewable energy 'landscape' and use of resources through active participation in a community of interest. The Society has engaged with like-minded groups, residents, councillors, universities, developers, trade bodies and affiliates as part of a broader community movement aiming to promote localism and build local economic resilience.

Each member is able to help shape TRESOC's development and engagement through a one member one vote system of governance, where we welcome your participation, and take part in a much broader movement of civil society as well as being able to expect a reasonable financial return.

## Local resilience

By making community energy an easier option, achievable by more people, we want to enable communities and individuals to exercise real market power.

In 2013, the Local Economic Blueprint for Totnes and District was published which identified the potential value to the local economy of our renewable energy resources as some £6m of income per year, plus a share of the £85m investment in order to develop them. The Blueprint was a result of an 18-month study by the REconomy Project, and partners including Transition Town Totnes, Totnes Town Council, Totnes Chamber of Commerce, The Totnes Development Trust, KEVICC, Schumacher College and South Devon College, with input from South Hams District Council, identifying key projects to take the work forward, one of which is TRESOC.



A better way of doing business: discussing our projects with those who take an interest, at the 2014 Local Entrepreneur Forum, Totnes. Photos: Tim Strasser

## Circular Economy

A circular economy seeks to rebuild capital, whether this is financial, manufactured, human, social or natural. The concept includes a shift from fossil fuels to the use of renewable energy, and the role of diversity as a characteristic of resilient and productive systems. It also includes discussion of the role of money and finance as part of the wider debate. TRESOC is striving to bring power to the idea of local community shareholding, to create opportunities for local jobs and to build a sustainable organisation.

As an early community renewable energy pioneer, and founder member of Community Energy England, TRESOC is engaged with and lobbies government for support for the community energy sector. The role of communities in decarbonising the power sector and sourcing 15% of our energy from renewables by 2020 is now specifically recognised and supported by the UK government with the recent publication of the Community Energy Strategy.

Greg Baker's comment neatly summarises what we feel is the need for a better balance between global and local commerce to support thriving economies:

*"Expanding lending and investment for our small businesses is vital to achieving the competitive, diverse energy market that this country needs. Community energy in particular is central to my ambition to move from the Big 6 to the Big 60,000, and must be supported. We need more community-generated power in the UK's energy market and to enable a wide range of investors - from commercial banks to individuals - to take advantage of this opportunity."*

- Rt Hon Greg Barker, Minister of State for Enterprise and Climate Change

*"My hope is that Britain's first ever Community Energy Strategy will mark a step change for the sector and lead to a sustainable and significant expansion in the years ahead."*

- Rt Hon Edward Davey MP, Secretary of State for Energy and Climate Change



Mandy describing TRESOC's role in the Circular Economy

# SHARE ISSUE SPECIFICS

## Ways to invest

You can apply for membership using the application form in this prospectus, or downloaded from our website. Please read the full terms and conditions.

### 1) Individual membership

Apply for shares for yourself from £20 to £100,000.

### 2) Membership for minors

Shares can be bought and held in trust for minors under the age of 18. The applicant must be over 18, and the minor nominated on the application form.

### 3) Gift Membership

Shares can be bought as a gift, in which case the details of the recipient should be filled out in the application form.

### 4) Corporate membership

Community owned renewable energy offers substantial opportunities to the local economy. TRESOC works closely with local businesses to maximise benefit to the community from sustainable growth in the local renewable energy economy. Local businesses are especially welcome to join as corporate members of the Society. Minimum investment is £200, and the maximum is £100,000.

### 5) With Totnes Pounds!

We're working with our installers and suppliers to accept them too.



The goal of the 2014 Share Issue is to raise between £500,000 and £1,500,000 from new and existing members. This could be achieved by 500 people each investing £3,000\*.

The success of the Share Issue and operation of the resulting projects will enable the Society to generate sufficient income to cover on-going operating costs and to pay a modest dividend to its members. We are very excited at the prospect of being able to pay a dividend over time to TRESOC members from the income that our projects will generate. The investment will also enable the work of the Society to continue, with the prospect of on-going future growth to develop renewable energy projects utilising solar, hydro, woodheat, anaerobic digestion, pyrolysis and other technologies in community ownership.

## Why is TRESOC seeking further investment?

At our AGM in December 2013, the TRESOC Board outlined a strategy, endorsed by members, to develop low-risk, investment-ready solar and hydro projects to be included in a Share Issue by June 2014.

## Member returns of 1.25% to 4%

As an Industrial and Provident Society, TRESOC may use its profits to promote its objectives and to pay interest to members on their shareholdings with a view to returning members' original capital over the life of the projects.

We aim to provide a financial return in the form of interest to members within 18 months of this share issue and to start returning capital within 3 years of our projects' inception. We have also decided to treat existing and new members as one class of shareholder with equal rights to returns.

The TRESOC Board is confident in their assumptions that if the lower target figure of £500,000 is attained members should receive a total return of approximately 1.25% on their investment, over the project lifetime, after provision for operating costs. The total rate of return on members' investment is estimated to increase to around 4.0% if the upper target figure of £1,500,000 is achieved.

The rate of interest and the return of capital shall be determined on an annual basis and may be reviewed, in consultation with members, with regards to the opportunity for investment in other projects. The TRESOC community strategy is to build the Society into a social enterprise that provides a long term, stable and dependable rate of interest to members on their investment and creates a community of interest around our sustainable energy needs.

The solar PV and hydro projects being undertaken by TRESOC in the current financial year are expected to yield an internal rate of return (IRR) of 6% to 9% over their lifetimes, with the project at Staverton expected to have a higher return due to its development capital.

Members should be aware that other projects that come under development in biomass, or hydropower, for example, might provide lower or higher rates of return on members' share capital, however the intention is that in consideration with the social impact the financial return should be accretive to existing members.

In order to keep administration costs to a minimum, interest payments of less than £5 on smaller shareholdings will be held by TRESOC and paid to the members when the accrued value exceeds £5.

\*Co-operatives UK Community Investor Research shows an average investment £3,500 in some share issues.

# INVEST IN 1 ORGANISATION AND 6 PROJECTS FOR CHANGE

## ROOF-MOUNTED SOLAR: THE UNSTOPPABLE TECHNOLOGY

Project 1

### SOCIAL

#### South Devon Rural Housing Association homes

Ownership of Solar PV on the Housing Association's roofs, generating free electricity for residents.

**Why we love it:**

Protects those potentially at risk of fuel poverty due to energy price rises. Retains SDRHA'S development capital for more urgently needed housing.

Project 2

### CULTURAL

#### Torquay Museum

Ownership of solar PV on Torquay Museum's roof to generate free electricity for the museum.

**Why we love it:**

Helps Torquay Museum reduce their carbon footprint and energy bills as part of their sustainability strategy. Perfect location to enable education programmes and outreach to their many visitors.

Project 3

### RURAL

#### Hatchlands Farm

Purchase of solar PV on working farm out-building, providing low-cost electricity to the farmer, with an excess exported to the grid.

**Why we love it:**

Already generating electricity and investment-ready for immediate income. An ideal alternative to ground-mounted arrays.

## HYDROPOWER: READY TO FLOW

Project 4

### ICONIC

#### Hydro at Totnes Weir

An equity stake in a fish- and angler-friendly Twin Archimedes Screw Hydro System and improved fish pass at Totnes Weir.

**Why we love it:**

Fantastic landmark scheme with widespread support. Local water supply pumped using energy from the river. A "win-win" for clean energy and ecology. Great partnership arrangement with developer and community.

Project 5

### PROVEN

#### Hydro at Sowton Weir

An equity stake in an operating Archimedes Screw on the River Teign, near Chudleigh.

**Why we love it:**

Already generating electricity and investment-ready for immediate income. Fish population increases as a result of the project.

Project 6

### HISTORIC

#### Hydro at Staverton Leat

Co-development of an Archimedes Screw project on the Dart at Staverton Leat.

**Why we love it:**

An exciting new project to develop. Utilises the leat, originally constructed to provide hydro power to Dartington Hall, way back in the 1920's.

TRESOC has signed a Memorandum of Understanding to facilitate community investment in these three local hydro power projects with Hydrosense; a consortium of Mannpower Ltd, Castleford Engineering and Fishtek, based at Dartington.

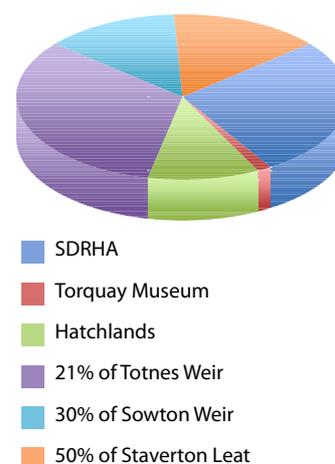
# THE INVESTMENT OPPORTUNITY

Five of the investment projects upon which this Prospectus is based are solar and hydropower projects where the necessary permits and consents have been obtained. The sixth project is a new hydro power development opportunity. Agreements are in place and we have completed our due diligence on the costs and projected returns. The total value of TRESOC investment in these projects is £1,500,000.

## 2014 SHARE ISSUE

Project	Cost £	Capacity kWp	Annual Gen. MWh	Cost per MWh £	Income £
SDRHA	415,000	280	270	1,537	41,000
Torquay Museum	22,000	18	17	1,294	1,780
Hatchlands	168,000	50	48	3,500	17,000
21% of Totnes Weir	500,000	63	231	2,165	37,500
30% of Sowton Weir	200,000	30	110	1,818	13,800
50% of Staverton Leat	225,000	50	180	1,250	25,300
<b>TOTAL</b>	<b>1,530,000</b>	<b>491</b>	<b>856</b>	<b>1,787</b>	<b>136,380</b>

## ANNUAL GENERATION 856 MWh



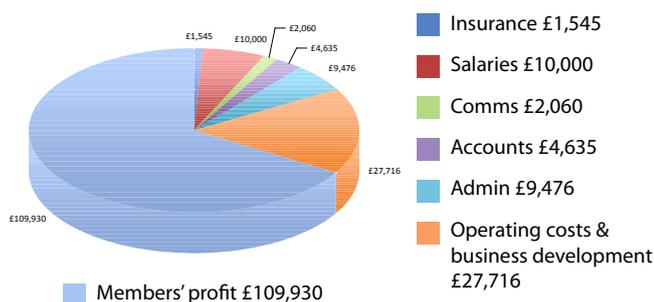
## EXISTING SOLAR

Leatside	38,000	27	24	1,583	3,800
Follaton	11,000	7	7	1,571	1,000
<b>TOTAL</b>	<b>49,000</b>	<b>34</b>	<b>31</b>		<b>4,900</b>

## Key benefits

The combined effect of TRESOC investment in these six projects will generate around 856 MWh of electricity per annum, raising a projected revenue of £136,000 per year for the Society. The carbon saving from the electricity generated is estimated at 385 tonnes CO<sub>2</sub>/year\*, and the electricity output is equivalent to 260 typical families' annual electricity consumption\*\*. The financial benefits to SDRHA residents of £40,000 per annum, to other customers, and to the local economy can also be considered when assessing the total value of the projects.

## WHERE THE INCOME FROM YOUR INVESTMENT GOES



Based on a projected budget for 2015, assuming £1.5M investment in 2014

## A note on hydro

We believe our hydro opportunities are 'landmark' projects in terms of: 1) a positive use of natural resources with low visual impact, 2) long life of the projects, 3) benefits for river life, such as fish, and 4) very positive feedback from our members, planners and communities. Hydro projects, which include income from electricity sales in addition to income from FITs, also benefit from direct linkage to energy price inflation, which has been running considerably ahead of retail price inflation over the past 10 years. TRESOC have used a modest and reasonable estimate to model this effect in our calculations, as it our view that energy price inflation is likely to continue rising ahead of the Retail Price Index, or RPI.

You may notice that the amount of electricity generated by the hydro schemes per kWp of capacity is much higher than for solar. This is due to the nature of the technology, as the way solar panels and hydro turbines convert our natural resources into electricity is very different. Well-sited

solar PV systems in the UK have a Capacity Factor of around 10%, calculated as follows. The Total Installed Capacity for solar is the maximum output of the panels in optimum daylight conditions. The Theoretical Maximum Output for solar PV is the amount that the panels would generate if they were producing at total installed capacity, day and night, all year round. Taking into account the number of daylight hours over the course of the year, and the varying intensity of the sunshine (the South West region is the best area for solar in the UK) the estimated actual annual output is some 10% of theoretical maximum output. The actual annual output divided by the theoretical maximum output x 100 is the capacity factor, expressed as a percentage.

For hydro schemes, the electricity generated depends on the volume and speed of the water flowing through the turbines, as well as the drop or 'head'. The Archimedes Screw turbines are sized at the optimum level to make the most of the available resource, based on some 50 years of Environment Agency flow rate data pertaining to the river in question. When river flow is too low, the turbines don't generate any energy (around 25% of the year), and the efficiency of the system varies at different flow rates. For these two hydro schemes in the Dart and the Teign, this yields a capacity factor of around 50%.

\* CO<sub>2</sub> equivalent source: Carbon Trust Conversion Factors 2013 - 0.45 kg CO<sub>2</sub>/kWh for grid electricity

\*\* Typical family equivalent source: Ofgem Typical Domestic Energy Consumption Figures 2011 - 3300 kWh electricity consumption per household per annum

# SOLAR ROOFS

## The project:

Ownership of solar PV on the Housing Association's roofs generating free electricity for residents, and a return for TRESOC members through the Feed-in-Tariff.

## Why we love it:

Protects those potentially at risk of fuel poverty due to energy price rises. Retains SDRHA's development capital for more urgently needed housing. Partnership with local solar installer Beco Energy.

## Where:

Homes across South Devon from Plymouth to Exeter, concentrated in Totnes and Dartington.

## Total installed capacity:

280 kWp

## Expected annual generation:

270,000 kWh

## Savings to SDRHA residents:

Approx. £40,000 per year

## Est. annual net income to TRESOC:

£41,000

## CO2 equivalent per year\*:

121 tonnes

## Customer equivalent per year\*\*:

81 families typical use

## Total project cost:

£415,000

## Status:

PV Systems designed based on detailed technical surveys. Agreement in place from SDRHA Board. Lease agreed in principal, subject to lenders' approval. Installations can be done under permitted development. Installer ready to start in June.

\* CO2 equivalent source: Carbon Trust Conversion Factors 2013 - 0.45 kg CO2/kWh for grid electricity

\*\* Typical family equivalent source: Ofgem Typical Domestic Energy Consumption Figures 2011 - 3300 kWh electricity consumption per household per annum

# PROJECT 1: SOCIAL

## South Devon Rural Housing Association (SDRHA)

TRESOC and SDRHA are working together to install solar panels on SDRHA properties across South Devon. TRESOC commissioned local company Beco Energy to carry out a survey of all SDRHA properties to find those properties with roofs suitable for solar power installations. The survey work is now complete, and over 70 properties will be fitted with solar panels, generating free electricity for use by the tenants and providing welcome relief from rising energy prices.

This project shows how TRESOC can use local investment capital to benefit the local economy as well as directly benefitting people in our community potentially at risk of fuel poverty.

South Devon Rural Housing Association's goal is to develop housing sensitively in the villages of South Devon. They believe that even in the smallest of villages, some social and low cost housing is needed, to both support any existing social or low cost housing and to maintain the viability of small villages and settlements.

*"TRESOC's community investment model is allowing us to benefit a large proportion of our tenants simply because TRESOC can operate at scale. The fact that SDRHA tenants will benefit directly from lower electricity bills, and TRESOC's local members will benefit from Feed in Tariff income is ideal. And, not investing our capital in retrofit solar means that we can continue to explore other renewable energy technologies, allowing us to look to the future. It's a perfect model for any housing association. Local money, local investment, what's not to like?"*

- Steve Prime, Chief Executive, SDRHA



SDRHA has been installing solar PV for the benefit of its residents for some time, working with Transition Town Totnes through the *Transition Streets* initiative and their current PV referral scheme. Photo: Solar PV installed by Totnes Solar on a SDRHA home, courtesy of Totnes Solar.

**The project:**

Ownership of solar PV on Torquay Museum's roof to generate free electricity for the museum and a return for TRESOC members through the Feed-in-Tariff

**Why we love it:**

Helps Torquay Museum to reduce their carbon footprint and energy bills, as part of their sustainability strategy. Perfect location to enable education programmes and outreach to their many visitors.

**Total installed capacity:**

18 kWp

**Expected annual generation:**

17,100 kWh

**Savings to Torquay Museum:**

Approx. £1,300 per year

**Est. annual net income to TRESOC:**

£1,780

**CO2 equivalent per year\*:**

8 tonnes

**Customer equivalent per year\*\*:**

5 families' typical use

**Total project cost:**

£22,000

**Status:**

System designed by Beco Energy, revised to address planning requirements. Agreement in place with Museum Trustees. Planning Application ready for submission.

# PROJECT 2: CULTURAL

## Torquay Museum

Ranked among the finest in South West England, Torquay Museum was built to house and display the collections of the Torquay Natural History Society, founded in 1844. The Venetian-Gothic style building dates back to 1874 and the land under the museum was leased for 1,000 years from the Cary family and rent was 1/- per year, which is still paid today.

Like many other museums of this era, energy efficiency was not a driving factor in its design, and measures such as insulation are difficult to incorporate retrospectively in a listed building. Visitors' expectations have grown, such that lighting and heating now account for the museum's high electricity bills – approx. £12,000 a year. Our project will see discreet, roof-mounted solar PV on a more modern extension that houses the museum's archives, making a dent in those expenses. It is, however, a significant step in the museum's Sustainability Plan, which may see TRESOC involved in developing a biomass boiler shared with the church next door!

*"Torquay Museum is excited to be working with TRESOC to develop this innovative initiative. Not only will we be reducing our energy costs in real terms, we will also be part of the solution when it comes to tackling climate change. By installing renewable energy solutions we will be acting as a beacon for other cultural institutions in the region and fuelling an increasing awareness of the role organisations can play in encouraging behavioural change. A huge benefit of our partnership with TRESOC is the opportunity to reach out to our community to invite investment, both financial and cultural. Through this scheme Torquay Museum will be able to build on its relationships within the community and become a fully integrated community asset."*

- Phil Collins, Museum Director



Torquay Museum – the potential to share the Community Energy message with a large local population.

## SOLAR ROOFS

### The project:

Purchase of solar PV array on farm building at Hatchlands, providing low-cost electricity to the farmer, with an excess exported to the grid.

### Why we love it:

Already generating electricity and investment-ready for immediate income. Great model for community investment in farm buildings. An ideal alternative to ground-mounted arrays.

**Total installed capacity:**  
50 kWp

**Average annual generation:**  
47,500 kWh [FIT rate as of Nov 2011: 34.5p gen, 4.5p export]

**Est. annual net income to TRESOC:** £17,000

**CO2 equivalent per year\*:**  
21 tonnes

**Customer equivalent per year\*\*:**  
14 families' typical use

**Purchase price:**  
£168,000 + transaction costs + VAT

### Status:

Commissioned in November 2011. Long term lease in place with landowner to 2036; 25 year FITs and lease. We have carried out due diligence on the performance of the system, and negotiated a price with the developer to give a return on investment of 9%.

# PROJECT 3: RURAL

## Hatchlands Farm

Hatchlands Farm sits just off the Plymouth Road about 5 miles west of Totnes. TRESOC were involved in helping to develop this project with installers South West Solar Projects a few years ago. It is now installed as a 50kWp system which was offered to us at a negotiated price earlier this year, and would increase our overall capacity and returns.

There is a market within the area for profitable renewable energy generation via sub-50kw solar PV installations on existing agricultural buildings, although many of these opportunities have been pursued privately. Roof-mounted panels on large, stable roofs provide the ideal electricity-generating scenario for community development or investment.



Ian and Jane on a site visit to Hatchlands Farm in 2011.

# HYDROPOWER

## The project:

An equity stake in a twin Archimedes Screw Hydro System and new fish pass at Totnes Weir, developed by Hydrosense.

## Why we love it:

Fantastic landmark scheme with widespread support. Local water supply pumped using energy from the river. Win-win for clean energy and spawning salmon & sea trout. Great partnership arrangement with developer and community.

## Total installed capacity:

300 kW

## Average annual generation:

1,100,000 kWh

## CO2 equivalent per year\*:

495 tonnes

## Customer equivalent per year\*\*:

333 families typical use

## Est. annual income to TRESOC

(21% stake): £37,500

## Total cost:

£500,000 to buy a 21% stake in the project.

## Status:

All consents in place to begin construction on the North Side of the weir. Power Purchase agreement with South West Water terms agreed, awaiting final sign off. Planning application for construction on south side of the weir in progress, as a second option. Construction scheduled from September 2014 for six months.

# PROJECT 4: ICONIC

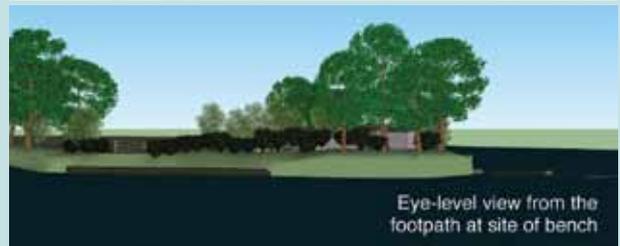
## Totnes Weir

Construction on the 300 kW hydropower plant at Totnes Weir is projected to start in September. TRESOC has negotiated a community investment of £500,000 in this long-awaited project. The installation will be one of the largest in the country, and an icon for sustainability, adding significantly to the total amount of renewable energy from hydropower in the area. The scheme has been developed by local company Fishtek with Castleford Engineering and Mannpower Consulting. This consortium, called Hydrosense, has a track record of projects, including nearby installations at River Dart Country Park and Sowton Mill.



The scheme is located within the active floodplain, so the turbine is designed to withstand a 100 year flood, with the additional impact of high spring tides and potential for increased river levels due to climate change.

Salmon and sea trout will benefit from the scheme, which includes a new award-winning fish pass and automatic fish counter. The new fish pass will allow the fish upstream whatever the level of water in the river, and the automatic fish counter will aid understanding of salmon and sea trout migration in the River Dart. As local poet Matt Harvey says, "a sad day for seal hunters!"



Totnes Weir and proposed scheme, looking to the north side of the Dart.

## HYDROPOWER

### The project:

An equity stake in an operating single Archimedes Screw on the River Teign near Chudleigh, designed and built by Hydrosense.

### Why we love it:

Already generating electricity and ready for investment. Increases in migratory fish population in the upper Teign as a result of new fish pass installed with the project.

### Total installed capacity:

100 kW

### Average annual generation:

368,000 kWh

### CO2 equivalent per year\*:

165 tonnes

### Customer equivalent per year\*\*:

112 families' typical use

### Est. annual income to TRESOC

(30% stake): £13,800

### Total Cost:

£200,000 to buy a 30% stake in the project

### Status:

Commissioned in October 2013

# PROJECT 5: PROVEN

## Sowton Weir

We have signed an agreement to invest £200,000 in the recently constructed 100 kW hydro power plant at Sowton Weir on the River Teign. Like the Hatchlands Farm solar roof, income will begin to accrue as soon as the purchase is made, with an internal rate of return to TRESOC of around 7% per annum. As with our estimates for Totnes Weir we have calculated returns over a 30 year-period rather than the full period of the lease to exercise some caution in our estimates.

Effective optimization at the site has led to better than expected returns from the project. The generation meter readings have been matched to flow data to show that the system is producing slightly more electricity than predicted. Although exact numbers are hard to predict, there may be an increase in fish populations of 10 to 30% over the next 3 to 5 years.

*"The Archimedes at Sowton Mill has improved the fisheries ecology of the River Teign by allowing more juvenile salmon and sea trout to reach the sea. The improved fish pass at the weir means more adult salmon and sea trout can reach spawning grounds on the upper Teign. An automatic fish counter has been installed that records fish numbers and species using the fish pass. This is one of only 4 fish counters in the South West and provides valuable information for the Environment Agency and the Teign Fishing Association."*

- Pete Kibel, Fishtek Consulting Ltd.



Discreetly-sited Sowton hydropower plant, operating at full tilt.

**The project:**

Archimedes Screw on the Dart at Staverton Leat to be developed by TRESOC and Hydrosense partnership.

**Why we love it:**

An exciting new project to add to our portfolio with encouraging estimated returns. Builds on our working relationship with Hydrosense.

**Total Installed Capacity:**

Est. 100 kW

**Average Annual Generation:**

Est. 360,000 kWh

**CO2 equivalent per year\*:**

162 tonnes

**Customer equivalent per year\*\*:**

109 families typical use

**Est. annual Income to TRESOC**

(50% stake): £25,300

**Total Project Cost:**

Est. £225,000

**Status:**

Exclusivity Agreement in place with landowners. Development and consenting scheduled for 2014. Construction 2015.

# PROJECT 6: HISTORIC Staverton Leat

TRESOC has signed an exclusivity agreement with local landowners to embark on the development of a 100 kW hydro power plant at Staverton in joint venture with Hydrosense. This project will use the leat, originally constructed to provide hydro power to Dartington Hall, way back in the 1920's. While all the work of consulting with neighbours and stakeholders, and obtaining planning and consents is yet to be done, we have confidence in the successful track record of Hydrosense in this field. Early entry to the project also offers a much higher projected rate of return, with income flowing as early as 2015.



Staverton Leat, with important historical roots.

**Further into the future**

Successful investment in this round of solar and hydro power projects described will produce further opportunities for community investment in these technologies.

In addition TRESOC, is actively researching projects in other renewable energy technologies with potential for commercial deployment under community ownership. We agree with the Community Energy Strategy that there is tremendous potential for growth in this sector. Discussions have taken place with potential partners in the following technology sectors:

- woodfuelled district heating and combined heat and power schemes in new developments, and in retrofit to existing building stock
- pyrolysis of woodfuel for the efficient and clean production of electricity and heat, with further long term opportunities for treatment of municipal and commercial wastes.
- community ownership and investment in the design, installation and management of integrated renewable energy systems in new housing, industrial and mixed use developments.
- anaerobic digestion of food and garden wastes, animal slurry and farm residues to produce clean electricity and heat, and a valuable fertilizer.

With each of these, and other technologies, TRESOC aims to form enduring partnerships with residents, local government, technology providers, local businesses, and key stakeholders to develop a diverse, secure and sustainable supply of renewable energy for the benefit of the local community.

# To Whom Does Energy Belong?

The TRESOC Rainbow Share Issue

By Matt Harvey

To whom does energy belong  
The energy that's everywhere?  
To you, to me, to anyone  
Who'll back TRESOC and buy a share

It flows from those who engineer  
The means, put physics to the test  
Tap elements from far and near,  
To all those willing to invest –

Invest in schemes and sweet techniques  
Both cutting edge and nothing new  
For modern geeks and Ancient Greeks  
Admire an Archimedes Screw

The spin-off of the river's flow  
A silver lining of the cloud  
Discreet skim from the sun's warm glow  
Embezzlement that is allowed

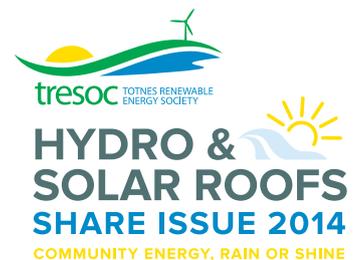
Afraid don't be to use the Force  
It's ethical as you could wish  
And close at hand and free at source  
It's clean, it's green, it's kind to fish

Affords the fuel-poor, cash-strapped  
(Whose rooftops catch the solar rays)  
A benefit that can't be capped  
Except by clouds and shorter days

For when it shines and when it pours  
– On one or both we can depend –  
The good accrues to you and yours  
When you're TRESOC's all-weather friend

So join the push to prime the pump  
Put pounds and pennies in the pot  
Prepare to take the plunge and jump  
And generate the Megawatt!

Ensure this share floatation floats  
– A buoyancy aid for everyone –  
Unfurl your twenty-one pound notes  
Step up, plunge in, splash out, shine on



Totnes Renewable Energy Society  
107 High Street, Totnes,  
Devon TQ9 5SN  
01803 867431  
[www.tresoc.co.uk](http://www.tresoc.co.uk)  
[admin@tresoc.co.uk](mailto:admin@tresoc.co.uk)  
[facebook.com/tresoc](https://www.facebook.com/tresoc)  
@TRESOC\_

# APPLICATION FORM

PLEASE USE CAPITALS AND BLACK INK

## Applicant Details

Title (Mr/Mrs/Ms/other) \_\_\_\_\_ Forenames \_\_\_\_\_

Surname \_\_\_\_\_

Address \_\_\_\_\_

Town \_\_\_\_\_ County \_\_\_\_\_ Postcode \_\_\_\_\_

Please provide a daytime telephone number in case of queries relating to this application.

Telephone Number: \_\_\_\_\_

If you are happy to receive future communication from TRESOC by e-mails please provide your e-mail address.

e-mail address: \_\_\_\_\_

## Corporate Membership

Note: the minimum investment for Corporate Membership is £200

Full Name of Company \_\_\_\_\_

Registered number \_\_\_\_\_ Address for Correspondence \_\_\_\_\_

\_\_\_\_\_

Contact Name \_\_\_\_\_ Phone \_\_\_\_\_

e-mail \_\_\_\_\_

## Your investment

You may invest no less than £20 and no more than £100,000

I wish to invest a total amount of £ \_\_\_\_\_

in the Totnes Renewable Energy Society on the Terms and Conditions of the Share Offer.

**Declaration**

I confirm my understanding that:

This application, if and when accepted by the Totnes Renewable Energy Society (TRESOC), forms a contract subject to English law on the Terms and Conditions of the Offer Document.

If insufficient funds are raised by the Offer, Application Monies will be returned.

I confirm that:

- I have read the Share Offer document, including the Risk Factors
- I am over 18 and resident in the UK
- I am not making an Application that would result in an aggregate holding for more than 100,000 shares
- I am not relying on any information which is not included in the Share Offer

I understand that the cheque supporting this application will be presented for payment upon receipt and I warrant that it will be paid on first presentation.

**Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Payment Details**

Please enclose a single cheque or bankers draft with your application for the amount shown above, payable to TRESOC and crossed A/C Payee. Send your completed application form and payment to:

**TRESOC, 107 High Street, Totnes, Devon, TQ9 5SN**

**Legal Information**

This Offer Document seeks to raise sufficient cash by the issue of Offer Shares at £1, payable in full on application to finance the installation of Solar Panels and Hydro Power installations as described in this share offer document. Income from these investments will provide for on-going operating costs of the Society, further project development, and for payment of interest to members, including the return of capital in due course.

The minimum shareholding for which you can apply under this Prospectus is £20 and the maximum is £100,000.

**Voting**

Each member shall have one vote, regardless of the value of his or her shareholding. Members will be kept informed of the value of TRESOC Shares and developments through the TRESOC website, by e-mails where the Member so wishes, by occasional Newsletter, the Annual Report and the Annual General Meeting.

**Nomination Option**

In the event of the death of a shareholder, the repaid value of the shares will normally be added to the estate for probate purposes. You may (if you wish) elect to nominate a recipient for the value of the shares (but only up to £5000) and thus (under current legislation) remove the shares (up to £5000) from your estate for probate purposes (i.e. the shares may pass to the nominee outside the Will of the deceased). The nominated property will nevertheless form part of the deceased's estate for Inheritance Tax purposes, unless the estate is an excepted estate.

**Important Notes on Risk**

Eligible members wishing to purchase membership in TRESOC should be aware of the element of risk in their investment. The major risks to your investment are described below.

**General Risk**

Investors should regard Offer Shares as a long-term investment with social as well as financial returns. Nobody should invest if they need ready access to their share capital. Any decisions to invest should be based on consideration of the documents as a whole and, where considered necessary, having consulted an independent financial adviser authorised under the Financial Services Act 1986, or a solicitor or accountant.

**General Risk Cont.**

Purchasing shares in TRESOC is a financial investment and is subject to a number of risks. With a minimum investment of £20, this share issue offer is designed to be accessible to everyone whilst minimising the risk exposure to low-income households and those who do not normally undertake financial investments of this kind. However, all prospective investors should carefully consider the risks before making a decision to invest.

**Renewable Energy Risks**

- Estimated returns on investment in solar PV projects depend on commissioning the installations prior to 1st October 2014, when the next reduction in the Feed in Tariff is due.
- The Staverton Project is dependent on regulatory permissions being granted.
- Projects may be delayed by financial or legal matters.
- New technology and developments may render existing technologies obsolete.
- Operational costs may rise faster than anticipated.
- The price of energy can go down as well as up.

**Securities Risk**

Agreements reached in relation to the various projects outlined in this Prospectus are subject to contract and conditional on Offer success and third party expressed intentions. The projects could encounter unforeseen delays or problems.

**Operating Assumptions**

TRESOC has made reasonable assumptions regarding the operating environment such as retail price index, energy price and cost price inflation that may have a material effect on our ability to pay interest and return capital. TRESOC has made reasonable assumptions about operating costs such as insurance, administration and salaries as well as the taxation of investments in conjunction with our partners in estimating the returns available to members. TRESOC is managed by skilled professionals, largely on a voluntary basis, and relies on the goodwill of members and the local community in its ongoing operations.

TRESOC assumptions concerning renewable energy operations, may not, in practice, be substantiated. The TRESOC solar PV and Hydro Power projects advertised in this share issue, or other renewable energy developments may encounter business problems over which the TRESOC Board will have no control. The Directors will seek to protect against these and all other foreseeable risks through prudent management practices including the careful selection of renewable energy projects in which to place members' investments.

**Authorisation & Regulation**

As an Industrial & Provident Society, TRESOC does not need to be authorised by the FSA to take deposits by issuing these withdrawable shares. Therefore the money that you pay for your shares is not safeguarded by any depositor protection scheme or dispute resolution scheme.

TRESOC is not engaged in "investment business" and TRESOC shares are not "investments" for the purposes of the Financial Services Act 1986. Therefore you do not have the level of protection that you might otherwise be offered by the Act. In particular this document does not need approval and has not been approved by "an authorised person" under section 57 of the Financial Services Act 1986.

This issue of shares is not regulated by the Financial Services and Markets Act 2000 or subsidiary regulations. You should not purchase these shares if you cannot afford to be without the money you will pay for them. If you are in any doubt about the information contained in this document you should consult an independent financial adviser authorised under the Financial Services Act 1986, or you should seek advice from a solicitor or accountant.

**Terms and Conditions for applying for shares**

You must be aged 18 or over.

**Sale or transfer of shares**

- Shares in TRESOC cannot be sold or traded and there is no prospect of them ever being worth more than their nominal value of £1.
- You may withdraw your shares on 180 days notice at the discretion of the Directors. TRESOC will not repay more than you originally paid for your shares. Shares may only be withdrawn after 3 years of subscription.
- Although shares in TRESOC are withdrawable, you may not be able to withdraw the full price you pay for them if the society does not have sufficient funds available at the time you want to withdraw your shares.
- In some circumstances the Directors may be compelled to write down the value of your shares. Should you then wish to withdraw your shares you will receive only their written down value.

**Application Approval**

You cannot withdraw your application for shares after we receive your application form.

The Directors do not have to accept your application for shares. They may decide not to issue shares to you or may allocate you less shares than you applied for. They do not have to give any reasons for their decision.

Your application will be considered for approval at the first convenient Board of Directors meeting after the closing date of the offer, and therefore you should not expect an immediate response.

**Payment**

TRESOC will acknowledge receipt of your cheque and application and may cash your cheque as soon as it is received. TRESOC will hold your money on trust for you in a separate account until the Directors consider your application, which will be after the offer closes.

The Directors will return your money to you (within 28 days of the Board of Directors meeting at which they consider your application) if they decide not to issue shares to you. If they decide to issue fewer shares to you than you applied for, they will return the balance to you (within 28 days of that Board of Directors meeting).

The money will belong to TRESOC (and the Directors will no longer hold it on trust for you) as soon as the Directors issue shares to you (to the extent that they take it as payment for shares).

The Society will not pay you interest on any money it returns to you.

**Your Promise to the Society****You promise that:**

- Your cheque will be honoured on presentation.
- You as an individual are at least 18 years of age.
- You are over 18 and hold on trust for your named children or named grandchildren with each of them having the benefit of not more than the maximum investment of £100,000 each.
- You have the authority to sign the application form. If you are signing it for another person, you will provide the Directors with evidence of your authority to sign if they ask to see it.
- You will supply us with proof of your identity and address if the Directors ask for it. They may need to do this to comply with the Money Laundering Regulations 2003. The Directors may have to hold your shares until they see this.

**Demutualisation**

You may possibly not benefit financially from your shares if TRESOC converts, or transfers its business or is wound up. In this case the only financial benefits you may receive from your shares are:

- The possibility of interest.
- The possibility of the return of the money you pay for your shares.

Your attention is drawn to rule 14.2 of the Rules of TRESOC, which entitles TRESOC as a condition of membership to require members to give up any personal financial benefit from conversion, transfer, or winding-up of the Society. Should any greater financial benefit accrue to the Society it will belong to such charity or communal benefit society as it may nominate from time to time.

To secure that object, and to ensure compliance with Rule 14.2 of the Society's Rules you will as a member be required under Rule 14.3 of the Society's Rules to agree to appoint as your attorney (for this purpose only) the person holding office (from time to time) as the Society's Secretary. That appointment is irrevocable. Your attorney has the power to sign on your behalf any undertaking for which they may ask in accordance with Rule 14.2.

**Miscellaneous**

This Prospectus and any agreement entered into for the purchase and sale of shares in the Society are governed by the law of England and Wales. The courts of England and Wales have non-exclusive jurisdiction.

You will be bound by the rules of TRESOC (as may be amended from time to time) if the Directors issue shares to you.

**The Registered office for TRESOC:**

107 High Street, Totnes, Devon TQ9 5SN

**Banker:**

Co-operative Bank plc, PO Box 101, 1 Balloon Street,  
Manchester M60 4EP  
Registered in England and Wales No. 990937.