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‘On the fringe of the Technical World’: female electrical appliance demonstrators in interwar Scotland

Eleanor Peters 

Eleanor Peters, School of Divinity, History and Philosophy, University of Aberdeen, Aberdeen, UK

ABSTRACT

This article examines the role of female electrical appliance ‘demonstrators’ in interwar Scotland. During this period, manufacturers launched a variety of domestic electrical appliances into a consumer market already saturated with solid fuel and gas-fired equivalents. To tackle the fierce competition the electrical industry deployed female demonstrators, originally trained in domestic science, to entertain and educate audiences across Scotland. Notably, Glasgow-based demonstrators, and representatives at Scotland’s domestic science colleges, expressed an early interest in working with the Electrical Association for Women, to benefit from the organisation’s modern and empowering image. This article compares demonstrators’ understanding of the purpose of their role with the views of consumers, domestic science experts and those working in the electrical industry. An insight into the vital, yet forgotten, ‘mediating’ role which demonstrators performed between the electrical industry and consumers adds to the wider discussion about women and their participation in a male-dominated workplace throughout the interwar years.

KEYWORDS

Electrical appliances; electrical industry; demonstrating; domestic science; Scotland; interwar; consumerism

Introduction

In the thirteenth annual report for the Women’s Engineering Society, founded in 1919, the electrical engineer Caroline Haslett drew attention to the work of the electrical industry’s ‘demonstrators’, celebrating their efforts but also distancing them from engineers:

Here is a promising profession for women, which, while not needing full technical training, may be said to be on the fringe of the Technical World, and demands an elementary knowledge of electricity, and a wide understanding of new electrical appliances.¹

Haslett continually promoted female interest in electricity during her career. In November 1924 Haslett co-founded the Electrical Association for Women (EAW), a women-led organisation which educated female consumers about domestic electrical technologies.² Throughout the interwar years, electrical appliance demonstrators entertained and educated thousands of visitors at exhibitions and in showrooms across Scotland, and the rest of Britain: preparing three-course meals, laundering linens and cleaning carpets

CONTACT Eleanor Peters  r01eap16@abdn.ac.uk  Eleanor Peters, School of Divinity, History and Philosophy, University of Aberdeen, 50–52 College Bounds, Aberdeen AB24 3DS, UK

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provided a diverting spectacle for intrigued audiences. Demonstrators were a vital component in the electrical industry's marketing strategy: they were trained representatives who spread the gospel of electricity and forged relationships with potential consumers wherever they travelled.

However, the perception that appliance demonstrators sat 'on the fringe of the Technical World' perhaps explains why they have been overlooked in histories of the engineering and electrical industries. Influential contemporaries like Haslett, complimented demonstrators but she did not embrace them as *bona fide* members of the electrical engineering community. The largely male-dominated electrical industry saw demonstrators as low-status figures as they were not tasked with making electrical knowledge; yet the commercial success of the industry's products was dependant on the mediating ability of these women.³ This article seeks to explore the forgotten role these female demonstrators performed, uncovering where they were trained, where they worked and how they functioned as mediators between consumers of domestic technologies and the electrical industry during the interwar period.

Seminal studies, such as Ruth Schwartz Cowan's *More Work for Mother*, changed the way in which historians analyse the relationship between women and technology. Studies which followed *More Work for Mother*, cast housewives as passive victims of the electrical industry, hopelessly cheated by false promises that electrical appliances were 'labour saving', and thus condemned to a life of never-ending domestic labour.⁴ Initially, companies marketed electrical appliances as an aid for servants; but as more households began to face the prospect of making do without servants, advertising shifted towards middle-class housewives in the interwar years.⁵ In interwar women's magazines appliance advertisements played a powerful role reinforcing women's domestic responsibilities and identity as homemakers; however, studies which explore these advertisements have tended to overlook women's autonomy.⁶ Yet, in recent years historians have started to explore women's dynamic role in creating the demand for electricity in both urban and rural settings, a matter which has previously been downplayed in electrification studies.⁷ Women's autonomy has been rediscovered and celebrated in British-centred studies concerning the activities of the affluent, inner-circle of the EAW.⁸ In addition, the 'Electrifying Women' project, funded by the Arts and Humanities Research Council, which culminated in the Spring of 2020, has broadened public awareness of the long participation of women in engineering, in order to help normalise women's position in the field.

Nevertheless, the large number of women who took on a prominent role as demonstrators in the electrical industry remains unexplored. Furthermore, the experiences of Scottish women as electricity mediators has been neglected, subsumed within the British experience, when a distinctly Scottish story can be told.⁹ Where electrification is concerned, the benefits of a distinct geographical focus has been evidenced recently at the National Museum of Ireland's 'Kitchen Power' exhibition, also supported by the Arts and Humanities Research Council. 'Kitchen Power' has revealed the crucial educational role and promotional work which was carried out by female-dominated rural community groups on behalf of the electrical industry in mid-twentieth-century Ireland. This article's investigation of Scottish electrical appliance demonstrators adds to the discussion about female electricity mediators, domesticity and women in the workplace in the interwar period. I argue that women's relationship with the male-dominated electrical industry was not one-sided. Women were not the electrical industry's hapless victims; instead

they benefited from the job opportunities, like demonstrating, which the industry presented to them. The role relied on the demonstrator having an intimate knowledge of the performance of housework and was therefore considered a suitable profession for women. Moreover, I argue that the activities of local demonstrators, were key to the electrical industry's marketing in the interwar years. A demonstrator trained within Scotland who participated in the local community was a more effective sales tool than a national marketing campaign which could not account for regional variances. This article is not an account of elite women working in the heart of the engineering community; it is, on the contrary, concerned with those who historians have not deemed to be extraordinary.

Studies on domestic electrification have focused chiefly on the British context at the expense of examining the Scottish experience. The number of electrified British homes increased from 7% in 1920 to 72% by 1938. The formation of the National Grid in 1926, the introduction of deferred payment schemes in the 1930s and the decrease in the unit price of electricity encouraged the rise in domestic electricity consumption.¹⁰ It is difficult to determine precisely how many of the homes which became electrified in the interwar years were in Scotland. In histories of electrification, it is presumed that in urban Scotland the rate of electrification was equivalent to that in urban regions of England.¹¹ Rates of electrification in the rural areas of Scotland, particularly the Highlands, are understood to have been low until the formation of the North of Scotland Hydro-Electricity Board (NSHEB) in 1943.¹² A study centred on the electrification of Scotland's domestic sector is sorely required. Conversely, the construction and administration of the country's various hydro-electric schemes has attracted considerable historiographical attention. Yet, these discussions have omitted the agency of women and have neglected the perspective of the consumer.¹³ The forthcoming study, *In a New Light: Histories of Women and Energy*, does highlight gender issues in the electrification of Scotland through an investigation of the demonstrator's role at the NSHEB after the Second World War.¹⁴ However, it was interwar demonstrators which gave the NSHEB the blueprint for the demonstrator role.

Scottish electrical appliance demonstrators are distinctive for several reasons. In Scotland, the domestic science colleges where demonstrators were trained were overseen by a dedicated Scottish Education Department (SED), the body which was responsible for administering the system of education in Scotland after the 1872 Education (Scotland) Act. The SED encouraged the colleges to take on demonstrating responsibilities, and to mirror one another with regards to training and resources. As a result, the colleges became electrified at a similar pace. Scottish appliance manufacturers, and supply undertakings, consistently worked with two domestic science colleges, the Edinburgh School of Cookery, later the Edinburgh College of Domestic Science (ECDS), and the Glasgow and West of Scotland College of Domestic Science (GWSCDS), to equip the colleges and familiarise the female students and teachers with electrical appliances.¹⁵ The ECDS became one of the largest domestic science colleges in Britain after the considerable extension of their residential accommodation and Atholl Crescent premises, located in the affluent Georgian New Town of central Edinburgh.¹⁶ Similarly, the students and teachers at the GWSCDS benefited from radical changes made to their College's premises in the interwar years. After the First World War the GWSCDS relocated to a purpose-built site on Park Drive in Kelvinside, nestled in the heart of Glasgow's academic community. The modern buildings and equipment attracted considerable attention from the domestic

science community and, as this article will discuss, representatives of the electrical industry.¹⁷ The governance of the domestic science colleges and the electrical companies which subsequently worked with the colleges were distinctive to Scotland.

Scottish electrical appliance demonstrators were also distinctive for their early enthusiasm to work with the EAW. Ruth Kennedy, an electrical appliance demonstrator for the Glasgow Corporation Electricity Department, and daughter of an engineer, inaugurated the first local branch of the EAW, outside London, in 1925.¹⁸ Glasgow was a logical choice for the first EAW branch. Glasgow's engineering and shipbuilding prowess of the previous century had earned the city the title 'second city of the empire'. Despite the industrial decline which marked Scotland's identity during the interwar years, the 1930s culminated with the Glasgow Empire Exhibition at Bellahouston Park to celebrate the city's 'progress' and 'modernity'.¹⁹ The Glasgow and District EAW branch fostered members' interest in electrical engineering through educational trips to power stations, electrical appliance showrooms and a tour of an 'all-electric bakery'.²⁰ The Edinburgh and District branch was formed in 1929, and other branches across Scotland in Aberdeen, Inverness, Dundee, Motherwell and Wishaw followed throughout the 1930s. Studies of the EAW's work in Scotland have been non-existent; instead attention has been centred on the London-based upper echelons of the organisation. A study of the EAW's activities in Scotland reveals how local EAW branches gave demonstrators, and other electricity mediators, an opportunity to foster a sense of community and play an active role in an influential organisation for women.

Practical difficulties are encountered when attempting to reconstruct the lives and careers of demonstrators. The findings in this article are based primarily on a critical assessment of the minutes of the electricity departments of local authorities and electrical appliance manufacturers; the minutes of the GWSCDS and the ECDS; and a survey of advertisements and articles concerning appliance demonstrators from a variety of national and local Scottish newspapers. The records of the GWSCDS and ECDS indicate the training of demonstrators; unfortunately, the demonstrators' subsequent placements are usually absent. Tellingly, despite being essential to the running of the electricity showroom, the historical records of appliance manufacturers and electricity supply companies rarely contain extensive information concerning the demonstrators they employed. The records do at least reveal the names of demonstrators and account for their position in the company in relation to rest of the individuals working in the showroom and sales departments. On the other hand, press reviews and accounts of exhibitions and adverts for showrooms uncover the minutiae of the demonstrator's work and their interests outside electricity and demonstrating. Material from the local press is supplemented by literature produced by the EAW, namely the organisation's own *Electrical Handbook for Women*, first published in 1934 and magazine, *The Electrical Age*, which began in 1926. These widely read sources, produced by an organisation which operated across Britain, have been included in this regionalised study to expose how the EAW employed their publications as tools to create a common identity and a shared forum among demonstrators across all areas of Britain.

This article commences by contextualising the commercialisation of domestic electrical appliances and the marketisation of such items in early twentieth-century Scotland, which led to the opening of showrooms and the employment of demonstrators. The role of domestic science colleges, and later the EAW, in the training and 'professionalisation' of these

demonstrators follows, concluding with a discussion concerning the demonstrator's job, her role as a mediator between consumer and the electrical industry, and her involvement in women's organisations. Accordingly, I seek to recover the demonstrator's role in consumer education and the electrical industry in the interwar period and embed it in the history of the electrification of Scotland and women's work.

Electricity marketing in the interwar years: exhibitions and showrooms

Diverse entities sought to sell and extend electricity and appliances across Scotland: this was achieved in part through mimicking techniques which had been employed by the gas industry for decades. Local authority supply undertakings and manufacturers appeared at prominent lifestyle exhibitions and opened chic and spacious showrooms to exhibit items like food mixers, refrigerators, vacuum cleaners and waffle irons. In addition, the Electrical Development Association (EDA), created in 1919, sought to increase consumer uptake, producing advertising on a national scale for the electrical industry; but, owing to the EDA's small budget, they struggled to compete with the output of the rival British Commercial Gas Association (BCGA), founded in 1911.²¹ The consumption of electrical appliances was low. Consumers struggled to afford electrical appliances and instead opted for cheaper appliances powered by solid fuel or gas. Electricity was predominantly used for domestic lighting.²² Electricity suppliers and manufacturers soon realised that competent and confident demonstrators provided a key interface with consumers. The need for demonstrators was born out of temporary exhibition spaces and the opening of dozens of electrical appliance showrooms in urban areas across Scotland, and the rest of Britain, during the interwar years.

Devised in 1908 by the London-based national newspaper the *Daily Mail*, the Ideal Home Exhibition provided space to advertise labour-saving appliances, promoting a 'modern way of life' through educating and entertaining middle-class visitors on innovations in homemaking.²³ The Scottish Ideal Home Exhibition, an offshoot which was also organised by the national newspaper, soon followed in September 1909 with the first show taking place in Glasgow, Scotland's most populous city. Glasgow was at the heart of what has been labelled the 'Scottish Renaissance' of the early to mid-twentieth century. This was a period when Scottish writers, artists and architects displayed a profound interest in modern philosophy and technology.²⁴ By the early 1920s Scottish fuel suppliers and appliance manufacturers had become a visible presence at these prominent lifestyle exhibitions to capitalise on the marketing opportunities which the occasion offered. In 1922 the Edinburgh Corporation rented a stand for their Electricity Department for the duration of the ten-day long Ideal Home Exhibition in Edinburgh investing nearly £500 to equip the display and advertise their presence at the Exhibition in the local press.²⁵ Visitor numbers swelled to between 10,000 and 13,000 daily throughout the Exhibition.²⁶ The presence of representatives of the electrical industry at Scottish lifestyle exhibitions reinforced to thousands of middle-class visitors, housewives especially, the claim that electrical appliances were necessary components of modern domestic life. A review in the *Scotsman* noted:

Every stand in the Market receives its share of attention, but those at which demonstrations of cooking or baking, or mechanical contrivances are proceeding, appear to be most

attractive to visitors. Some of the latest electrical appliances, in particular, are watched with great interest. It is natural that an exhibition which is meant to display the ideal home should be specifically attractive to ladies, who seem to be the majority among the visitors.²⁷

The popularity of appliance demonstrations among female visitors at lifestyle exhibitions did not go unnoticed. Supply undertakings and retailers opened attractive appliance showrooms in fixed locations in towns and cities across Scotland to entice potential female consumers to visit. The Edinburgh Corporation opened their showroom in 1923 on George Street in the city's upscale Georgian New Town. The Corporation showroom was equipped with a variety of electrical appliances, heaters, and other apparatus. Manufacturers of electrical goods eagerly supplied sample goods to display.²⁸ Similarly, other Corporations located their showrooms in the heart of the city: the Glasgow Corporation's Electricity Department headquarters and showroom was located in a palazzo-style building on Waterloo Street near the city's shopping district. The Aberdeen Corporation's showroom was based on Union Street, the city's major shopping thoroughfare. Due to long-standing opposition from the Gas Department, the Dundee Corporation's Electricity Department did not open a showroom until 1936.²⁹ Less populated towns were not left out: Falkirk opened its showroom in 1934 and in South Lanarkshire the Hamilton Electricity Department opened its showroom in 1939.³⁰ In the 1930s the Isle of Arran Electric Light and & Power Company also opened its own small showroom for the benefit of the island's 4,506 inhabitants, demonstrating the far-reaching influence of appliance marketing.³¹

As well as supply undertakings, competing appliance retailers invested in showrooms. Edinburgh-based companies like John White & Co., J. Sibbald & Sons, and James Gray & Sons had all manufactured kitchen ranges since the mid-1800s and expanded into electrical engineering by the 1920s. J. Sibbald & Sons boasted about their 'really up-to-date electrical showroom' which stocked 'a fine selection of electrical goods' including cookers, fires, kettles, toasters, and coffee pots.³² In 1926 the Metropolitan-Vickers company, formerly British Westinghouse, chose to situate their headquarters directly opposite the Glasgow Corporation Electricity Department: their formal opening attracted 'visitors from all parts of the country' who inspected the 'palatial buildings', 'up-to-date fittings' and labour-saving appliances.³³ Like their rivals in the gas industry, urban electrical appliance manufacturers opted for Art Deco style shop fronts and interiors for their showrooms. The Art Deco style was chosen for its associations with modernity, efficiency and personal comfort. In this period store interiors were changing with the addition of new lighting, the removal of excess counters and creation of streamlined exteriors.³⁴

To complement the new showrooms and to reach a greater number of consumers, supply undertakings also created customer-facing divisions. Representatives of the electrical industry acknowledged that there was a need for a mediator between the consumer and the manufacturer. These mediators would work from the new showrooms. In a meeting with the Staff and Works Sub-committee at the Edinburgh Corporation Electricity Department, Frank A. Newington, the resident electrical engineer and manager of the Electricity Department, proposed that the electrical showroom required 'one showroom assistant, one lady cookery demonstrator, one lady junior assistant and one boy' to run efficiently.³⁵ Newington had already decided that the lady cookery demonstrator

would be provided by Edinburgh's domestic science teacher training college, the ECDS. In 1914, Newington had established a relationship with the ECDS when he had arranged for an electric stove to be lent to the School for a trial period.³⁶ Subsequently, Newington continued to be the point of contact for the ECDS when electrical appliances were lent. Newington specified that the showroom required the presence of a lady demonstrator who was 'accustomed to electric stoves' and that she 'must hold a diploma from the School of Cookery'. The overall control of the Showroom would fall under the remit of the Electricity Department's new male sales superintendent, with a male showroom assistant on hand to supervise the female members of staff.³⁷

This arrangement did not allow the female staff to have managerial responsibility; instead their role was to be confident performers with knowledge grounded in domestic science theory, and an ability to convey the benefits of electricity to female consumers. As noted by Ellen Lupton in *Mechanical Brides*, many of the new jobs pegged as 'women's work' in the twentieth century were centred on mediating: for instance, the secretary, receptionist, and the telephone operator. In these professions, women were valued as good mediators owing to their 'gentle voices' and 'mild tempers'.³⁸ In the case of demonstrating there was already a precedent for employing women in this mediating role because it was what the gas industry had done. Demonstrating was a role with a recognised sex-typed history. The gas industry utilised female cookery teachers as demonstrators at public lectures and cookery competitions to educate potential consumers about domestic gas appliances.³⁹ Little has been written about early electrical appliance demonstrators although it is understood that manufacturers recruited them from cookery schools too. For example, during the 1890s, Margaret Fairclough of the Gloucester Road School of Cookery in London, was temporarily employed by an electrical appliance manufacturer to demonstrate electric heaters, cookers and irons.⁴⁰ Consequently, the concept of the 'lady demonstrator' was an established role in the fuel industry in the twentieth century.

Other marketing tactics, such as the attempt to produce 'collective' advertising through the implementation of the EDA, were not overwhelmingly successful in Scotland. The EDA was chiefly funded through contributions from supply undertakings and major trade associations; however, supply undertakings did not always provide consistent support to the EDA.⁴¹ This reluctance to support the EDA was particularly evident in Scotland. The EDA was London-based and in the early years of the organisation the majority of the large-scale exhibitions which they participated in were unsurprisingly centred around the capital city. In 1923 the Edinburgh Corporation's Electricity Committee declined the EDA's request to contribute £800 towards an electrical exhibit at the British Empire Exhibition at Wembley. Newington responded to the EDA acknowledging that the British Empire Exhibition was a 'significant event', but that a contribution of £100 was more reasonable.⁴² In the same year the Aberdeen Corporation Electricity Department was approached by the EDA and they opted to join, justifying the decision by remarking that the city's Gas Department benefited from a membership to the BCGA.⁴³ However, just two years later the Electricity Committee did not recommend renewing the subscription and instead offered a one-off donation to the EDA, demonstrating the fickle nature of their support for collective advertising.⁴⁴ Instead of relying on the EDA to stimulate sales, representatives of electricity supply undertakings in Scotland focused on ensuring that their electricity department was prominent in the community and that their marketing

was relevant to the local population. For these purposes, locally trained demonstrators were crucial assets to the electricity industry.

During the interwar years electricity supply undertakings invested in marketing opportunities which were tailored to their local communities. Supply undertakings prioritised opening local showrooms and making appearances at Scottish lifestyle exhibitions over investing in national advertising campaigns produced by the EDA. However, showrooms and exhibitions required the services of reliable and confident demonstrators who could educate and entertain diverse audiences. Engineers like Newington considered women with domestic science training to be the ideal candidates for demonstrating positions in the electrical industry. Evidently, a beneficial relationship existed between representatives of the electrical industry and Scottish domestic science colleges throughout the interwar years.

'Abundant opportunities to enter upon a congenial career': demonstrating, domestic science colleges and the electrical industry

The ECDS and the GWSCDS were both founded on a philanthropic agenda and in the early twentieth century became responsible for training women to become domestic science teachers. Louisa Stevenson (1835–1908) and Christian Guthrie Wright (1844–1907) established the ECDS in April 1875: both women were campaigners for women's higher education and were concerned with improving working-class women's access to opportunities for paid employment in domestic service, kitchens and laundries.⁴⁵ The GWSCDS, affectionately known as the 'Dough School', was founded in 1908: the college was born out of the amalgamation of two rival cookery schools which had been set up to improve the nutritional standards of the working classes in Glasgow.⁴⁶ From 1908 the SED was responsible for overseeing the running of the ECDS and the GWSCDS as they were recognised as 'central institutes', responsible for the training of teachers of domestic subjects. Owing to a surplus of domestic science teachers and a decline in interest for the domestic service training courses, the colleges diversified their curriculum in the interwar years and became largely responsible for the supply and training of electrical appliance demonstrators in Scotland.

The SED was keen to continue the two colleges' legacy in delivering informative demonstrations to the community. In 1910 Dr John Struthers, secretary to the SED, encouraged the principals of the ECDS and the GWSCDE 'to get hold of those who actually had the management of homes and spread knowledge of the subject among them'.⁴⁷ Domestic science colleges across the rest of Britain served a similar purpose from the late nineteenth century.⁴⁸ In the interwar years the ECDS and GWSCDS hosted demonstrative lessons on a variety of subjects for the community. Local women's groups and educational bodies would seek out the services of colleges: the ECDS were engaged by numerous branches of the Scottish Women's Rural Institutes (SWRI) for classes in cookery, dressmaking, embroidery, basket making and other subjects.⁴⁹ The GWSCDS hosted demonstrations and exhibitions during open days at their new premises in Park Drive. In 1922 one open day attracted nearly 3,000 visitors to the College.⁵⁰

Gas demonstrations were a core part of the ECDS's repertoire: the College received free services and goods from the Edinburgh Corporation Gas Department and in return the Gas Department had a reliable pool of knowledgeable gas demonstrators to

work for them at events like the Ideal Home Exhibition.⁵¹ Gas cookery demonstrations were a form of entertainment providing a budget outing for housewives, and cheap publicity for the industry.⁵² In 1924 a teacher from the ECDS delivered a course of cookery demonstrations across Edinburgh, and in the coastal suburbs of Portobello, Leith and Cramond for the Corporation's Gas Department.⁵³ Manufacturers recruited locally trained demonstrators from reputable colleges who were familiar with the appliances to give authority to the demonstration. Domestic science college demonstrators could also be trusted to look professional. One female audience member at a demonstration in Dundee's Assembly Rooms recalled:

Very trim and business-like did the lecturer look in her cool lilac gown, white sleeves, and generous white apron, scarcely out of the mangling folds. The little pleated cap that crowned her head might not have been useful, but it was certainly ornamental!⁵⁴

Consequently, representatives of the electrical industry in Scotland, such as Newington of the Edinburgh Corporation, copied the tactics of the Gas Department by introducing electrical appliances into domestic science colleges to enable students to gain experience in the use of this technology.

Representatives of the ECDS and the GWSCDS made no secret of their interest in new domestic technologies. The principals of the two colleges were the eager recipients of electrical appliances. Shortly before her resignation as principal of the ECDS in 1930, Ethel de la Cour oversaw the Finance Committee's pledge to install electricity into all laundries and fit electric cookers into all the School's kitchens.⁵⁵ Persis Wingfield, de la Cour's successor, was also an electrical enthusiast. Wingfield organised for teachers from the College to undergo training in the use and care of electrical appliances at a local technical school, as her predecessor had arranged.⁵⁶ Dorothy Melvin, the principal of the GWSCDS from 1910 to 1946, was particularly forceful: she was not afraid to approach local electrical appliance manufacturers to request free goods for educational purposes. In 1928, after visiting the Ideal Home Exhibition in London, Melvin negotiated with the makers of a compact electric washing machine to have one installed in the College as an advertisement.⁵⁷ When gifts could not be obtained, the Glasgow Corporation Electricity Department mediated with local manufacturers on behalf of the GWSCDS to secure generous discounts on electrical appliances. In 1932 the Glasgow Corporation liaised with the Falkirk Iron Company to obtain a large electric oven, a broiling table and an electric griddle with a fifty per cent discount on the price.⁵⁸

The principals of domestic science colleges had much to gain from their association with the electrical industry: de la Cour, Wingfield and Melvin all regarded electrical appliances as a modernising force in the field of domestic science. During the interwar period the electrical industry's marketing campaigns depicted electricity as a symbol of modernity: the purchase and use of electrical appliances offered one way through which consumers could aspire to be scientific and 'fashionably up-to-date'.⁵⁹ The gas and solid fuel industries had also claimed that their appliances too represented efficiency and modernity, but in the domestic science community the allegiance to electricity was evident.⁶⁰ The Finance Committees at the GWSCDS and the ECDS both became reticent towards investing in solid fuel ranges in the interwar years as these had become synonymous in domestic science theory, and in the electrical industry's advertising, with preparing food in unhygienic and dirty conditions. When Caroline

Haslett spoke to domestic science teachers at the 1937 National Union of Teachers conference, she insisted:

The whole outlook on domestic science has been changed by electricity, which now ranks in the forefront of the sciences- its true place, as it influences every part of the community. The time-honoured art of domestic science has been linked with the new science of electricity with far-reaching consequences.⁶¹

Straying from the powerful relationship which the domestic science community had forged with representatives of the electrical industry risked jeopardising the new-found respect for domestic science, a field which its supporters often struggled to get taken seriously.⁶²

Melvin was keen to broaden the career prospects of the students at the GWSCDS and she considered the electrical industry to provide ample opportunities. Demonstrating for the electrical industry was a new and exciting career for women in the domestic science community. In 1930 Melvin contributed to an article for the *Scotsman* where she elaborated on the types of posts domestic science students could apply for:

a student well equipped with the proper qualifications, had abundant opportunities to enter upon a congenial career, because besides teaching, she could take up demonstrating, broadcasting, management, dietetic work, publicity in connection with food products, while a vast field had been opened up by electricity.⁶³

The Association for Teachers of Domestic Subjects (ATDS), a professional national body founded in 1896 to which Melvin and Wingfield belonged, also enthusiastically encouraged the entrance of domestic science students into the electrical industry. In 1930 the ATDS's monthly magazine, *Housecraft*, ran a series of articles concerned with careers in which 'Domestic Demonstrating' made an appearance. The reader was assured that there was a 'real dearth' of trained women demonstrators and that the electrical industry was dependant on domestic science colleges to train demonstrators in order to avoid 'a rather serious problem'.⁶⁴

The relationships forged between representatives of the electrical industry in Scotland and the GWSCDS and ECDS were significant for numerous parties. Local appliance manufacturers and electricity suppliers could confidently source experienced demonstrators from respected educational institutes who specialised in demonstration work across Scotland. Familiarising representatives of the GWSCDS and ECDS with electrical appliances was paramount. The GWSCDS and ECDS equally benefitted from getting their facilities updated at a reduced cost. The principals of domestic science colleges demonstrated their prowess in negotiations over prices with the electrical industry, understanding the powerful role which they could play in marketing domestic electrical appliances. The demonstrating role became high status in domestic science colleges: this was a new, aspirational career which allied domestic science with the growing electrical industry.

'The interpreter between the manufacturer and the housewife': the creation of the qualified demonstrator

Historians have shown that the careers of women who worked in mediating roles, such as marketing and advertising, are worth investigating. Studies concerning home economists, who worked in the marketing departments for the gas and electric industries in the United

States of America, have found that these women's careers were aspirational and influential.⁶⁵ Lillian Gilbreth's career in consumer research, conducted at the Johnson & Johnson company during the 1920s, exemplifies how women could position themselves as experts who could extract information from female consumers and adeptly translate this knowledge into readable data for corporations to utilise.⁶⁶ Correspondingly, demonstrators working in the electrical industry successfully positioned themselves as experts who could act as mediators between consumers and the electrical industry. In 1921 *The Woman Engineer* reported on an exhibition of 'Modern Housecraft' in Kensington which had been organised by Mary Gwynne-Howell, a 'woman domestic engineer'. Gwynne-Howell's exhibition featured 'the latest methods and devices for saving labour in the home' and provided a platform to demonstrate the use of electrical washing machines and cookers. Gwynne-Howell advertised herself as the 'interpreter between the manufacturer and the housewife'.⁶⁷ She also offered a home consultation service to housewives on matters relating to labour saving and efficiency within the home.⁶⁸

The Woman Engineer praised Gwynne-Howell's career choice and declared demonstrating to be 'a wide open field for women who have some engineering knowledge'. The role of the demonstrator was deemed vital in the prevention of the misuse of electrical appliances by 'unskilled domestic labour'.⁶⁹ In a subsequent article Gwynne-Howell claimed that the untrained, 'ordinary woman' made poor purchasing decisions. She accused female consumers of buying cheap, small electrical appliances such as kettles, toasters and table stoves which would not lessen the burden of housework. Gwynne-Howell made a plea for women to be provided with an education in electrical appliances: 'stress must be laid upon electrical equipment because undoubtedly electricity is the finest household aid possible and it is upon the future development of electricity that the hopes of the progressive housewife are fixed'.⁷⁰

In the interwar years domestic science colleges began preparing girls to take on this role as the electrical industry's expert 'interpreter': students at the ECDS and the GWSCDS were taught 'Electrical Housecraft', lessons concerning domestic applications of electricity and electrical appliances. Electrical Housecraft classes covered a variety of topics and activities including: discussion about theories of electricity and magnetism; the generation of electricity; studying the use and construction of electrical appliances; practice in using electrical appliances; and taking meter readings to calculate electricity bills. To complement Electrical Housecraft lessons, Dorothy Melvin arranged for a demonstrative and experimental 'Reyolle' switchboard to be installed at the GWSCDS 'to enable students to comprehend the various connections and usages to which modern electricity can be applied'.⁷¹ The demonstrative switchboard featured fuses and circuit breakers to teach students how to control, protect and isolate electrical equipment. The GWSCDS also provided samples of electrical appliances to students, for practising 'dismantling plugs, sockets and so forth'.⁷² Lessons in Electrical Housecraft were taught by the housewifery teacher Janet MacKirdy who in 1930 constructed, with the assistance of her students, a four-foot-tall electrified model house complete with miniature switches, lamps and domestic appliances. MacKirdy's lesson on the Model House was singled out by the EAW and featured in the organisation's magazine, *The Electrical Age*, as an exemplar exercise which gave students some knowledge of electrical switches, fuses and simple wiring and repairs.⁷³

A turning point came when the EAW introduced several qualifications including a dedicated Diploma for Demonstrators and Saleswomen in 1931. In the EAW's self-published history, *Electricity and Woman: 21 Years of Progress*, the training of demonstrators was described as 'haphazard' and an 'unsatisfactory state of affairs', remedied by the EAW. Seemingly, the knowledge of demonstrators, who had worked in appliance showrooms, and for the electrical industry throughout the 1920s, had varied substantially: 'some had Domestic Science training, others, starting as showroom assistants, picked up a smattering of electrical applications as they went along'.⁷⁴ The EAW advocated for standardised training for demonstrators across the country. As a result, the EAW had a monopoly on training electricity demonstrators. Going forth, demonstrators were to have a more advanced technical knowledge than their predecessors; although the EAW had never complained about the technical training provided for demonstrators by GWSCDS. It was emphasised in the EAW's *Electrical Handbook for Women*, edited by Caroline Haslett, that the most important aspect of the electrical appliance demonstrator's job was to be fully acquainted with the purpose and inner-workings of the appliance on show: 'unless she is absolutely conversant with the construction, mechanism, and running costs, she will be quite unfitted to tell a convincing story'.⁷⁵ The hosting abilities and skilful presentation of goods would only get the demonstrator so far; these attributes were subsidiary to the technical knowledge which a demonstrator was expected to have about electrical appliances.

The syllabus for the Diploma for Demonstrators and Saleswomen was prepared as a joint effort between the EAW, representatives of the electrical industry and members of the domestic science teaching profession. This Committee decided that the introduction of a course which combined 'technical instruction with domestic science' was required. In addition, the Committee deemed that those students who obtained an EAW Certificate in Electrical Housecraft would be qualified for junior and assistant posts in appliance showrooms, while those who went on to become Diploma holders would be qualified to take more senior posts. The EAW claimed that the introduction of a Diploma gave women demonstrators 'increased importance and a status of their own' and that they took 'greater pride in their work'. By December 1932 over 132 Diplomas had been issued across Britain. The EAW considered the implementation of the Diplomas as a success: job advertisements for demonstrator posts began to stipulate that applicants ought to possess the EAW Diploma.⁷⁶ The GWSCDS and ECDS gladly introduced the EAW courses into their syllabus and arranged for their science teachers to be trained to deliver the courses to students.

The EAW's concern with professional qualifications for demonstrators was part of women's efforts in the interwar years to redefine and improve their roles to secure better conditions of service in male-dominated industries.⁷⁷ In Scotland, women pushed back against the Restoration of Pre-War Practices Act which sought to resituate females into 'women's work', primarily domestic service.⁷⁸ The EAW wished to empower electrical appliance demonstrators by equipping them with qualifications tailored to the role. The idea was that qualifications introduced career progression for demonstrators. Women in junior or assistant posts in showrooms could study for their Diploma to enhance their career opportunities. The salaries of female showroom assistants and demonstrators was also differentiated by salary. In 1929 the Edinburgh Corporation paid their female assistant a salary of £105 per annum.⁷⁹ In comparison, at a conference

concerning 'Women's Work and Opportunities in the Twentieth Century', Dorothy Melvin, rather optimistically, suggested that a demonstrator working for the electricity companies, could earn up to £300 to £400 a year.⁸⁰ Feminists and women workers were frustrated at the lack of career progression in other female-dominated professions, such as telephony, retail and office work.⁸¹ The introduction of the Diploma for Demonstrators and Saleswomen certainly assisted the GWSCDS when sourcing placements for their students. In 1937 eight demonstrators trained in the college were received at locations across Scotland, and another nine were trained over the following two years.⁸² The dominant pattern in women's employment in the 1920s and 1930s was that women were regarded as a temporary part of the workforce, content to carry out routine work without the possibility of promotion.⁸³ Certainly, in the gas industry demonstration work in showrooms and at trade exhibitions was often part-time, with long and irregular hours.⁸⁴ Evidently, by upskilling demonstrators the EAW hoped to avoid a situation where female demonstrators were viewed as disposable to the electrical industry. In Scotland, where the effects of economic depression were felt most acutely in Britain, domestic science colleges welcomed the EAW's input to professionalise the demonstrating profession.⁸⁵

The achievements of women who attended the ECDS and the GWSCDS and studied for their EAW qualifications were celebrated in the local press. In 1935 the *Dundee Courier* boasted of the success of a local girl, Jessie E. Prophet, who had gained first class certificates in housewifery, cookery and institutional housekeeping at the GWSCDS.⁸⁶ Prophet went on to receive the EAW Diploma for Demonstrators and Saleswomen and then obtained a post as a demonstrator at an electrical firm based in Glasgow before returning to her hometown to become a demonstrator at the Dundee Corporation's new showroom.⁸⁷ The *Scotsman* too consistently listed the names of the women awarded with certificates after taking the EAW demonstrator examinations.⁸⁸ Fuelling this praise was the desire to see women in 'women's jobs'. Throughout the 1930s Scotland was 'the most depressed of depressed areas' with a high unemployment rate, which was unfairly blamed on women 'usurping' men's jobs in engineering and the heavy industries.⁸⁹ A job like demonstrating, which had been coded as 'women's work' since the previous century, was therefore not seen as a threat to the thousands of unemployed Scottish men. Accordingly, the press commended the careers of women who had succeeded without seeming to deprive a man of his job.

Interestingly, some demonstrators held qualifications which would have enabled them to work in more technical, and better-paid, posts. Owing to the Scottish trade union's hostility to women working in jobs typically coded as 'male', demonstrators did not aim to seek employment elsewhere in the electrical industry. Mary K. Marshman, who worked as a demonstrator in the Dundee showroom in the late 1930s, held a national certificate with distinction in electrical engineering from Dundee's Technical College.⁹⁰ Demonstrators like Marshman confirm that the knowledge and skills which some demonstrators held greatly exceeded what was expected and required from them in their day-to-day role. More importantly, it raises the question of whether demonstrators were actually 'on the fringe of the Technical World', or whether they were kept outside of it. In Scotland demonstrating was a career option which offered women a gateway to a semi-technical position without the threat of being accused of taking a man's job.

'All things electrical'? The demonstrator's role in the electrical industry and the community

Electrical appliance demonstrators performed a vital and varied role on behalf of the electrical industry: they were the industry's greatest sale's weapon. Jane Busch's study of appliance demonstrators working in the USA found that demonstrators were more effective than advertising campaigns at convincing consumers to buy new appliances: 'such a major investment was not likely to be made based on advertising claims alone. The crucial educational job—demonstrating the cooking advantages of a modern range— was performed by home service departments'.⁹¹ Many of the innovations which were featured in advertisements for ranges, such as the oven thermostat, were only recognised and appreciated by the cook if they knew how to use them properly. Similarly, Scottish demonstrators, working for local authority supply undertakings and appliance manufacturers, did the majority of the 'selling' of electrical appliances in their communities. In 1934 the Carron Company, founded in the mid-eighteenth century and one of the largest ironworks in Europe, hired a permanent travelling demonstrator, Margaret Greig, to turn around the company's disastrous sales figures in their Electrical Cooking and Heating department.⁹² In the following year Greig's performance was evaluated by the company: 'the Lady Demonstrator's activities appeared to be serving a very useful purpose and had been instrumental in booking numerous orders for cookers following upon her demonstrations in different parts of the country'.⁹³ Despite the department still running at a loss, Margaret Greig's contribution was praised. No other employee, manager, or canvasser in the department received the same level of praise from Carron's managers in these economically depressed years.

Cookery demonstrations were the most popular and ubiquitous type of appliance demonstration which was performed during the interwar years. In addition to being able to confidently use electric cookers, grills and hobs, demonstrators also had to be competent cooks. However, it was vital that demonstrators convinced their audience that the success of a meal prepared was down to the cooker, rather than their culinary skills. *The Electrical Handbook for Women* included a chapter concerning 'Demonstration and Salesmanship' which described the ideal setting for a cookery demonstration. The author of the chapter, Mabel G. Reading, was the head saleswoman of the City of London Electric Supply Company. 'Kettles, toasters, percolators and waffle irons, when being demonstrated, should be attractively arranged with all the necessary plates, cups and saucers, on a table covered by a nice white cloth'. The demonstrator should take on the role of a hostess by offering customers food and drink prepared using the appliances on demonstration. Reading recommended 'typewritten recipes which are freely distributed' as well as 'useful domestic hints' to accompany the demonstration of electrical appliances for the kitchen.⁹⁴

Beyond cookers, demonstrators had to be well-acquainted with a variety of domestic electrical appliances including vacuum cleaners, washing machines, and irons. As the first point of contact at exhibitions, demonstrators could not be caught out by the queries of potential consumers. On several occasions during the 1920s the Edinburgh Corporation assisted in opening a demonstrative 'all-electric house' to visitors. The *Scotsman* described the house as 'an opportunity of seeing electrical equipment in the home in

its fullest development' and promised 'a staff of demonstrators is to be on duty to give explanations to visitors of the working of the various sets of apparatus'.⁹⁵ One visitor to the house recalled the demonstrator having no trouble when asked to work out the weekly running costs of the washing machine in the house.⁹⁶ On occasion demonstrators experienced hostility from members of their audience. At one Glasgow exhibition a demonstrator was confronted with 'unbelieving' housewives who accused her of putting towels that were already clean into the demonstrative electric washing machine. It was only when one spectator retrieved dirty linen from her own home for the demonstrator to wash that the housewives trusted that they were not being duped.⁹⁷

Demonstrators were not just selling the electrical industry's products: they actively discouraged consumers from engaging with the rival gas industry. Demonstrators spoke of the 'noxious gases or poisonous fumes', which were associated with gas cookery, while reassuring their audience that cooking with electricity produced a 'wholesome and appetising finished product'.⁹⁸ In her *Electric Cookery Book* Jessie Nicolson, a demonstrator who worked at the Glasgow Corporation's Electricity Showroom, induced potential consumers to switch to electricity by claiming that the health of the family was at stake when gas was used: 'there are many instances where an electric cooker has been installed on medical advice, because of the fact that in its use there are no injurious or malodorous fumes given off'.⁹⁹ This message supplemented the EDA slogans which appeared in local press: 'For Health's Sake- Use Electricity' and 'Switch on to Health'.¹⁰⁰ During the interwar years the reputation of the gas industry suffered a significant blow owing to a sudden increase in carbon monoxide poisoning deaths among consumers following the deregulation of gas processing under the terms of the 1920 Gas Regulation Act.¹⁰¹ While the gas industry continued to be plagued by consumer suspicion, demonstrators working for the electrical appliance industry exploited consumer's concerns. Although the competition between gas and electric cooking was constant throughout the interwar period, the uptake of electric cookers remained slow. By the end of 1938 it is estimated that there were around nine million gas cookers in British homes, compared to only one million electric cookers.¹⁰²

Notably, demonstrators had not always been expected to participate in industry rivalry. Until the early 1920s, demonstrating had been a flexible field to work in. Demonstrators had been able to pursue opportunities working for different fuel industries and various manufacturers. Ena Dods, a demonstrator and, for a period, principal of the Dundee School of Cookery performed cookery lectures across Scotland using both gas and electric stoves. In 1906, during a 10-day gas exhibition at Queen's Gate Hall in Inverness, Dods was used as an 'expert' to give twice-daily 'interesting and useful displays' of cookery.¹⁰³ Six years later Dods was demonstrating electrical appliances at an exhibition in Edinburgh. The event offered consumers a 'unique display' to 'convince you of the low maintenance cost of these appliances, not to mention the saving in labour, consequent on the absence of smoke and dirt'.¹⁰⁴ In the following year Dods was demonstrating electrical appliances again at the City Hall in Perth.¹⁰⁵ Dods continued to demonstrate throughout the interwar years, performing on behalf of the Falkirk Corporation Gas Department, the Bellshill Gas Department and even travelling to England to demonstrate for the Newcastle and Gateshead Gas Company.¹⁰⁶

However, with the establishment of the EAW in 1924, and the competing Women's Gas Council (WGC) in 1935, a rivalry emerged between these two bodies which

represented demonstrators professionally.¹⁰⁷ Threatened by the appearance of another body which provided training and qualifications for women entering work in the fuel industry, the EAW apparently refused to cooperate with their equivalents in the gas and solid fuel industries altogether.¹⁰⁸ Before the formation of these two bodies, the situation was certainly more fluid with no strict boundaries between electricity and gas demonstrators. This, perhaps unintended, consequence of professionalisation was that it forced demonstrators to narrow their choices. The EAW or the WGC would stand to lose credibility if their demonstrators were seen to be flitting back and forth between gas and electricity companies, particularly since much of their promotional work relied upon critiquing their competitors for being unsafe and inefficient: demonstrators now had to choose between them.

Although many demonstrators could rely on work in showrooms or in exhibitions in fixed locations, some travelled thousands of miles around the country to perform demonstrations. In Scotland, numerous regions of which were sparsely populated, many demonstrators spent all their time travelling rural locations. During the 1930s the Scottish Power Company acquired specially equipped travelling demonstration vans to enable demonstrators to reach remote and rural locations across Scotland. The company boasted that in the Grampian area alone their vans travelled an excess of 11,000 miles in 1934:

All the towns and villages in the Grampians, Scottish Highlands and the Ross-shire Area have been visited and interest stimulated in the advantages of an electricity supply. Our lady demonstrator attends at women's rural institutes and showrooms to give practical demonstrations in districts not visited by the demonstration vans.¹⁰⁹

In a speech given at a conference concerning housing at the Empire Exhibition the travelling demonstrator Margaret Greig from the Carron Company, described herself as a 'missionary (...) an essential link between the industry and the public, between the producer and the consumer'.¹¹⁰

Social commentators deplored the country woman's supposed inability to adapt to change and called for more educated women with domestic training to 'introduce [country women] to the mysteries of this new power'.¹¹¹ However, the low uptake of electrical appliances in rural areas was rarely due to the scepticism of rural housewives; instead, it was that the infrastructure was not in place to accommodate domestic electrical appliances. Few of the hydro-electric schemes in operation in interwar Scotland catered to domestic consumers, and this was a source of frustration to rural housewives. In an account of the Empire Exhibition, a member of the SWRI criticised the popular 'Clachan' display for romanticising the 'black-house [which] is nothing more than a rural slum'. The author argued that electric light would be a great 'boon' to rural life, and that it seemed strange to 'sentimentalise' a home without proper means of lighting or heating.¹¹² Throughout the interwar period the SWRI, and the Women's Institute in England, campaigned for improved housing conditions in rural areas: obtaining water and electricity supplies for rural households were crucial demands.¹¹³ Certainly, there was no lack of interest in electrical appliances in rural areas. Scottish demonstrators were sensitive to the needs and desires of their rural consumers responding to SWRI requests to give lectures and demonstrations on electricity at branches across the country.¹¹⁴

The EAW also continued to draw attention to rural female consumers. In 1935 the EAW committed itself to an investigation of the provision of electricity for the urban and rural working class. Haslett utilised evidence from this investigation when presenting her findings to the McGowan Committee on Electrical Distribution in 1936. The outcome of the Committee was a call for an adequate service with standardised rates and voltages in rural areas as well as urban centres.¹¹⁵ Upon the formation of the NSHEB the EAW, recognising the distinctiveness of the region, targeted 'suitable girls' from the Scottish Highlands to be trained in the use of electrical appliances at the domestic science colleges, who would then work as Electrical Housecraft Advisors for the NSHEB.¹¹⁶ The difficulties faced by demonstrators working in the Highlands during the interwar years paralleled those of their 1960s counterparts as both struggled to encourage Highland consumers to switch from solid fuel to electricity.¹¹⁷

The assumption that women's participation in Scottish politics was limited during the interwar years has been challenged in recent historiography.¹¹⁸ The activity of electrical appliance demonstrators further exemplifies that women proudly participated in organisations which sought to mould civic identity and campaign for rights for professional women. As this essay has discussed, the bodies responsible for training demonstrators were eager to institute qualifications which would ensure that there was a clear career trajectory. As a result, demonstrators took pride in the profession and protected the integrity of their work by becoming involved with organisations, like the SWRI, which campaigned for improved housing conditions and accessibility to utilities. Demonstrators in urban areas also sought to increase the respectability of the demonstrating profession. Jessie Prophet held prominent positions in at least two female-led organisations in Dundee. Prophet was the assistant secretary of the city's EAW branch, which formed in 1936, and treasurer of Dundee's National Federation of Business and Professional Women's Clubs (NFBPWC), formed in 1940.¹¹⁹ Founded in the United States of America after World War One, the NFBPWC was established to organise the resources of professional women and to tackle the issues faced by working women. The NFBPWC performed as an umbrella organisation for women's clubs: some were industry-specific organisations like the EAW, others were groups with a social or cultural purpose. The NFBPWC sought to equip women with formal meeting skills and training in public speaking to prepare them for participation in public life.¹²⁰ It is unsurprising that demonstrators were eager to join the NFBPWC as Caroline Haslett was the organisation's vice-president from 1936 and became the president in 1950.

Mary Marshman, from the Dundee Corporation's Electricity Showroom, was also 'well known in Dundee business circles': she was the first secretary of the Dundee EAW branch and a member of the Dundee Soroptimist Club.¹²¹ Unlike other women's organisations of the time, the Soroptimist movement did not have an open membership; instead, the 'Rotarian' method was preferred, in which only one person from an occupation could join any one branch. Soroptimist Clubs also had their beginnings in the USA: founded in California in 1921, Soroptimist Clubs were started with the intention of improving the lives of women and advancing their status within society. By 1927 there were branches in Edinburgh and Glasgow and five years later the Dundee branch formed.¹²²

The EAW's rivals, the WGC, were hesitant to identify themselves as 'full-blooded' feminists, but the leadership did support various strategies designed to support women in the

home and the workplace, including plans for affordable working-class housing.¹²³ Similarly, electricity demonstrators were participants in groups which encouraged women to be active citizens and campaigned for improved working conditions for women; but, these groups did not necessarily desire equality between men and women. Revealingly, during the interwar years the Soroptimists did not join in the protests against attempts to limit the working hours of women and young people.¹²⁴ Establishing the motivations and politics of female-led organisations in interwar Scotland is no easy task. Women's organisations often supported a range of demands across the equal rights and welfare spectrum.¹²⁵ The participation of the Dundee demonstrators in the Soroptimist Club and the NFBPWC suggests that the rights of professional, or 'white-collar' women were high on their agenda. Crucially, this indicates that demonstrators also identified themselves as belonging to this professional class of working women.

Owing to their participation in local politics, appliance demonstrators could become somewhat minor celebrities in the local press. The demonstrator's preoccupation with electricity was the basis for anecdotes and light-hearted stories. Jessie Prophet was known as the 'Dundee Cookery Expert Bride' when she married in 1941.¹²⁶ Prophet also gave a series of 'war-time cookery lectures' from the Electricity Department's Showroom. An article concerning Prophet's lectures claimed that 'cooking by electricity or indeed anything to do with electrical equipment is of special interest to Miss. J. E. Prophet, demonstrator at Dundee Corporation Electricity Department Showrooms'.¹²⁷ Similarly when Mary Marshman married in 1939 the *Dundee Courier* wrote: 'as befits a lady whose business interests have centred round the uses to which electricity can be put, Miss Marshman has decided on an all-electric home'. The *Dundee Courier* humorously added that the local EAW branch gifted the newlyweds an apt wedding present: an electric coffee percolator.¹²⁸

Far from only being concerned with 'all things electrical', electricity demonstrators found that their job encompassed mastering sales tactics, hosting skills, critiquing competing appliances and campaigning for better working conditions for professional women. The demonstrating role, which appeared to be simple and self-explanatory on the surface, was fraught with challenges and competing demands which shaped the demonstrator's identity and her relationship with her work.

Conclusion

The way in which manufacturers showcased electrical appliances to consumers changed in the interwar period. As a wider range of electrical appliances became available on the domestic consumer market, representatives of the electrical industry became less reliant on sporadically hiring demonstrators to work at temporary exhibition spaces to advertise their goods. Instead, electricity suppliers and appliance manufacturers opened new domestic appliance showrooms in fixed locations, and they required locally trained, qualified demonstrators to work in these spaces. In Scotland, representatives of the electrical industry relied on the GWSCDS and the ECDS to supply demonstrators. Owing to the encouragement of the SED, the colleges became known for producing capable and confident demonstrators for the gas industry and this caught the attention of Scottish representatives of the electrical industry, who were disenchanted with the London-centred activities of the EDA. Further region-specific studies of electricity marketing

in Britain would be required to determine whether relationships between local appliance manufacturers and domestic science colleges were replicated across the country.

The number of demonstrators working for the electrical industry increased throughout the interwar years. As the demand for demonstrators increased, their training became formalised and professional bodies which represented demonstrators emerged. The EAW, which held a strong Glasgow prominence from the earliest days of the organisation, implemented rigorous training for demonstrators to standardise the role. Domestic science colleges, electricity suppliers and appliance retailers welcomed and respected these qualifications. Demonstrators, once transient workers in the electrical industry, became assets to the electrical industry in the interwar period and their services were valued by members belonging to the centre of the technical world. However, in their attempt to standardise the demonstrator's role, the EAW recognised the local expertise which demonstrators could bring to the position. In rural Scotland, demonstrators supported the SWRI and empathised with the infrastructural challenges faced by rural householders. In their local community, the press praised demonstrators for their achievements and participation in politics while performing a distinctly gendered role.

To the electricity industry demonstrators were saleswomen: they showcased appliances and convinced consumers that they simply could not get by without electricity. Conversely, the EAW saw the demonstrator as a novice engineer. Demonstrators sold the all-electric lifestyle by being 'conversant with the construction' of appliances, rather than using sales patter. In domestic science circles, demonstrating represented a modern and aspirational career for women. Ultimately, demonstrators' own words revealed that they considered themselves to be 'interpreters' and 'missionaries'. Demonstrators were not so much 'on the fringe of the Technical World' as they were communicating between two worlds. Their work was to translate technical jargon and practice into user-friendly language, spreading electrical education across the country to some of the most remote and far-flung regions of Scotland. This mediating position, between the electrical industry and consumers, remained critical to the electrical industry's marketing schemes in Scotland throughout much of the twentieth century. The work of demonstrators in interwar Scotland built the foundation for the future successes of the NSHEB.

Notes

1. Caroline Haslett, 'The Women's Engineering Society Thirteenth Annual Report', *The Woman Engineer* 3, no 12 (1932): 188–9, esp. 189.
2. Carroll Pursell, 'Domesticating Modernity: The Electrical Association for Women, 1924–86', *British Journal for the History of Science* 32, no 1 (1999): 47–67.
3. See Steven Shapin, 'The Invisible Technician', *American Scientist* 7, no 6 (1986): 554–63. A distinct parallel exists between demonstrators in the electrical industry and Steven Shapin's 'Invisible Technicians' who laboured without recognition in Robert Boyle's laboratory in seventeenth-century England.
4. Ruth Schwartz Cowan, *More Work for Mother: The Ironies of Household Technology from the Open Hearth to the Microwave* (New York: Basic Books, 1983); and Judy Wajcman, *Feminism Confronts Technology* (University Park: Pennsylvania State University Press, 1991).
5. Lucy Delap, *Knowing Their Place: Domestic Service in Twentieth-Century Britain* (Oxford: Oxford University Press, 2011), esp. 115–21.
6. Jill Greenfield and Chris Reid, 'Women's Magazines and the Commercial Orchestration of Femininity in the 1930s: Evidence From *Woman's Own*', *Media History* 4, no 2 (1998): 161–

- 74; see also Alice Wood, 'Housekeeping, Citizenship, and Nationhood in *Good Housekeeping and Modern Home*', in *Women's Periodicals and Print Culture in Britain, 1918-1939: The Interwar Period*, eds. Catherine Clay et al. (Edinburgh: Edinburgh University Press, 2018), 210-24.
7. See Graeme Gooday, *Domesticating Electricity: Technology, Uncertainty and Gender, 1880-1914* (London: Pickering & Chatto, 2008); and Rosemary Shirley, 'Pylons and Frozen Peas: The Women's Institute Goes Electric', in *Transforming the Countryside: The Electrification of Rural Britain*, eds. Paul Brassley, Jeremy Burchardt and Karen Sayer (Abingdon-on-Thames: Routledge, 2017), 135-4. For North American perspectives see Amy Sue Bix, 'Equipped for Life: Gendered Technical Training and Consumerism in Home Economics, 1920-1980', *Technology and Culture* 43, no 4 (2002): 728-54; Jane Busch, 'Cooking Competition: Technology on the Domestic Market in the 1930s', *Technology and Culture* 24, no 2 (1983): 222-45; see also Carolyn M. Goldstein, 'From Service to Sales: Home Economics in Light and Power, 1920-1940', *Technology and Culture* 38, no 1 (1997): 121-52. For a parallel study on the gas industry see Anne Clendinning, *Demons of Domesticity: Women and the English Gas Industry 1889-1939* (Aldershot: Ashgate Publishing, 2004).
 8. Pursell, 'Domesticating Modernity', 47-67; and Suzette Worden, 'Powerful Women: Electricity in the Home, 1919-40', in *A View from the Interior: Feminism, Women and Design*, eds. Judy Attfield and Pat Kirkham (London: Women's Press, 1989), 131-50.
 9. See Esther Breitenbach, Alice Brown and Fiona Myers, 'Understanding Women in Scotland', *Feminist Review* no 58 (1998): 44-65; and Arthur McIvor, 'Gender Apartheid?: Women in Scottish Society', in *Scotland in the Twentieth Century* eds. T. M. Devine and R. J. Finlay (Edinburgh: Edinburgh University Press, 1996), 188-209, esp. 188. Gender historians have argued that the experiences of Scottish women are frequently excluded from British-centred studies concerning education, domesticity, work and politics.
 10. Peter Scott and James Walker, 'Power to the People: Working-Class Demand for Household Power in 1930s Britain', *Oxford Economic Papers* 63, no 4 (2011): 598-624, esp. 600; and Sue Bowden, 'Credit Facilities and the Growth of Consumer Demand for Electric Appliances in the 1930s', *Business History* 32, no 1 (1990): 52-75.
 11. For instance Sue Bowden and Avner Offer, 'The Technological Revolution That Never Was: Gender, Class, and the Diffusion of Household Appliances in Interwar England' in *The Sex of Things: Gender and Consumption in Historical Perspective*, eds. Victoria de Grazia and Ellen Furlough (Berkeley and Los Angeles: University of California Press, 1996), 244-74; Leslie Hannah, *A Study of the Development of the Electricity Supply Industry in Britain to 1948* (London and Basingstoke: The Macmillan Press, 1979); and Thomas P. Hughes, *Networks of Power: Electrification in Western Society, 1880-1930* (Baltimore and London: Johns Hopkins University Press, 1983). Studies concerning the electrification of Britain rarely provide any separate exploration of Scottish domestic electricity consumption in this period. Statistics concerning the electrification of Scotland are amalgamated with England and Wales, obscuring any regional variations which may have existed. In other cases, historians have entirely omitted Scotland from the discussion.
 12. Ewen A. Cameron, 'The Scottish Highlands: From Congested District to Objective One', in *Scotland in the Twentieth Century*, eds. T. M. Devine and R. J. Finlay (Edinburgh: Edinburgh University Press, 1996), 153-69, esp. 161-6.
 13. James Miller, *The Dam Builders: Power from the Glens* (Edinburgh: Birlinn, 2002); Peter L. Payne, *The Hydro: A Study of the Development of the Major Hydro-Electric Schemes Undertaken by the North of Scotland Hydro-Electric Board* (Aberdeen: Aberdeen University Press, 1988); and Emma Wood, *The Hydro Boys: Pioneers of Renewable Energy* (Edinburgh: Luath Press, 2002).
 14. Vanessa Taylor, 'Gender and Agency in the Anthropocene: Energy, Women, and the Home in Twentieth-Century Britain', in *Women and Energy*, eds. Abigail Harrison Moore and Ruth Sandwell, *RCC Perspectives: Transformations in Environment and Society* no 1 (2020): 11-5.

15. A third domestic science college in Scotland, the Aberdeen School of Domestic Science, was also governed by the SED. However, the training of would-be demonstrators was infrequent at the Aberdeen School until the 1940s, hence why this study is primarily centred on the colleges based in Edinburgh and Glasgow. See Robert A. Bayliss, *Aberdeen School of Domestic Science: An Outline History* (Aberdeen: Waverley Press Limited, 1979).
16. Tom Begg, *The Excellent Women: The Origins and History of Queen Margaret College* (Edinburgh: John Donald Publishers, 1994), 107.
17. Willie Thompson and Carole McCallum, *Glasgow Caledonian University: Its Origins and Evolution* (East Linton: Tuckwell Press, 1998), 41–53.
18. 'Electrical Education in Glasgow', *The Electrical Age* 2, no 1 (1930): 13.
19. Sarah Britton, 'Urban Futures/Rural Pasts: Representing Scotland in the 1938 Glasgow Empire Exhibition', *Cultural and Social History* 8, no 2 (2011): 213–232, esp. 215.
20. Pursell, 'Domesticating Modernity', 47–67.
21. Bill Luckin, *Questions of Power: Electricity and Environment in Interwar Britain* (Manchester: Manchester University Press, 1990), 23–26. By 1930 the EDA received little more than £30,000 from the supply industry: less than one-third of the amount spent on 'co-operative' advertising by the 'gas interest'.
22. Bowden and Offer, 'The Technological Revolution', 244–74.
23. Deborah S. Ryan, *The Ideal Home Through the 20th Century* (London: Hazar Publishing, 1997), 9.
24. See Margery Palmer McCulloch, *Scottish Modernism and its Contexts 1918–1959: Literature, National Identity and Cultural Exchange* (Edinburgh: Edinburgh University Press, 2009).
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Notes on contributor

Eleanor Peters is currently a PhD candidate in History at the University of Aberdeen. She is the author of 'Observation, Experiment or Autonomy? Women's Familiar Science Writing in Britain, 1790–1830', *Notes and Records: The Royal Society Journal of the History of Science* 70, no 1 (2018): 71–90. Her PhD thesis explores the mediating role which domestic science colleges played between the electrical industry and consumers in early to mid-twentieth-century Scotland.

ORCID

Eleanor Peters  <http://orcid.org/0000-0003-4659-8274>