



Written Evidence provided to the Public Accounts Committee Support for Innovation to Deliver Net Zero

Written evidence submitted on behalf of the Small Steps Big Changes Partnership by

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1. Introduction to Small Steps Big Changes

[Small Steps Big Changes](#) (SSBC) received £45m of funding through [The National Lottery Community Fund's – 'A Better Start' ten-year Programme](#) (2015-2025), which is focused on promoting good early childhood development. The SSBC programme supports the improvement of social and emotional development, communication and language, and nutrition outcomes amongst 0–4-year-olds in four ethnically diverse council wards in Nottingham City. SSBC is a partnership programme, which includes parents, health providers, early years, early help, academics, and community and voluntary sector providers. SSBC adopts a test and learn approach and is currently undertaking projects aimed at increasing breastfeeding rates among local families.

2. Breastfeeding as a priority for public health and net zero

A health perspective to deliver net zero is needed, so that co-benefits are maximised. Increasing breastfeeding reduces carbon pollution while also improving the health of infants and those who breastfeed.

2.1 Improving breastfeeding rates benefits babies, mothers and society

Breastfeeding benefits the health, nutrition, and development of the child and the mother's health.¹ The decision to breastfeed is very personal and influenced by many factors.^{2,3} In certain situations, infant formula is vital for babies as a substitute for or complement to human milk. However, breastfeeding rates in the UK are among the lowest breastfeeding rates in the world, with eight out of ten women stopping breastfeeding before they want to.⁴

2.2 Breastfeeding benefits the environment

Breastfeeding has environmental benefits over formula, with the estimated carbon footprint of formula use up to two times that of breastfeeding.⁵ The relatively higher carbon footprint of formula feeding results from the formula itself (its contents [cow's milk], manufacture, transportation, packaging etc), the energy used to sterilise the equipment and the equipment itself (usually plastic). None of which are needed for breastfeeding. Although innovations in infant formula productions can reduce its carbon footprint, a greater reduction could be achieved by decreasing the demand for infant formula by meeting global breastfeeding targets.⁶ For the UK alone, carbon emission savings gained by supporting mothers to breastfeed would equate to taking between 50,000 and 77,500 cars off the road each year.⁷ There is thus an environmental imperative to increase breastfeeding.⁸

2.3 Carbon Neutral Nottingham 2028



In 2020, Nottingham declared a climate and ecological emergency and consequently set itself an ambition to become the first carbon neutral city by 2028 (CN28). To achieve this, it requires everyone who lives, works or visits the city to reduce their carbon footprint significantly. Breastfeeding is but one way this can be achieved and therefore, it can be promoted alongside the Small Steps Big Changes' Feed Your Way campaign (see section 3.1) as another positive for people to consider for their own carbon reduction journey.

Nottingham City Council is currently working with the two city universities, Nottingham Trent University and the University of Nottingham to better understand how different communities in the city can be made more aware and engaged with the CN28 agenda including linking other key agendas such as this.

CN28 is purposefully encouraging businesses and organisations in the city to pledge their support and contribute where they can. The 'We Support CN28' campaign now has over 50 city businesses signed up. To help others to be part of this, CN28 are encouraging them to also sign up to be a safe space for breastfeeding as part of the breastfeeding awareness campaign as this can be used as a positive example of the business supporting carbon emissions reduction in the city as part of their own contribution. From the outset, CN28 has been about delivering other key co-benefits such as public health so this innovative approach to encourage businesses and organisations to be part of these two important agendas is relatively unique.

3. Investment in breastfeeding research and innovation to deliver net zero targets

If the government wants the economy to meet net zero targets by 2050, the protection, promotion and support for breastfeeding needs to be prioritised. Despite the numerous benefits of breastfeeding for those who breastfeed and their babies, breastfeeding rates in the UK remain low and unequitable⁹. More research is needed to design, evaluate, scale up and sustain breastfeeding innovations. In the following, two projects commissioned by Small Steps Big Changes are highlighted as example areas of breastfeeding innovations that warrant further research.

3.1 Feed Your Way: A breastfeeding public health campaign

SSBC commissioned a social marketing firm to develop a breastfeeding public health campaign, underpinned by self-determination theory¹⁰. The campaign seeks to address not just the breastfeeding dyad but what has been shown as important; the communities that exist around them.¹¹

The campaign, Feed Your Way, aims to make Nottingham a breastfeeding-friendly city and supports local families to achieve their breastfeeding goals and empowers them to 'feed their way', for as long as they want to, with the support of healthcare professionals and their local community. The



campaign was designed through engagement with a comprehensive range of stakeholders and local families, including The Big Nottingham Breastfeeding Survey which received 1,800 responses. The use of risk reduction health messaging as an external motivator was perceived as controlling by families and their stories highlighted the importance of intrinsic motivation to breastfeed. The campaign thus moves away from controlling messaging around breastfeeding and focuses on three psychological needs that facilitate and sustain intrinsic motivation: Autonomy (breastfeeding is choice), relatedness (this is a collective issue and there is support available), and competence (every attempt is a success).

The campaign presents the real, lived experiences of six Nottinghamshire families. Videos, photos, and interviews with these families show a realistic image of their very different breastfeeding experiences and expectations, including both the challenges and the positives. Feed Your Way empowers families to make and own their decision about how to feed their babies.

Feed Your Way's public health approach is supported by research that suggest that promoting breastfeeding as a public health issue may prove more cost-effective than interventions aimed solely at women.¹² Evaluation of the Feed Your Way campaign is planned for later this year. More research is needed to understand how public health and societal interventions can improve breastfeeding rates in a cost-effective way.

3.2 Breastfeeding Voucher Scheme

The [Breastfeeding Voucher Scheme](#) is offered to all mothers who have a Family Nurse through the Family Nurse Partnership. Family Nurses offer intensive support to first time mums who are under the age of 19, until their babies are 2 years old. Mothers are eligible for the voucher scheme if they are providing breastmilk to their baby at 6 stages after birth: 2 days, 10 days, 6-8 weeks, 3 months, 6 months, 1 year. The project aims to increase the number of children receiving any breastmilk, increase the duration that children receive breastmilk and provide evidence for whether breastfeeding incentives are an effective way to increase breastfeeding rates.

Preliminary findings from interviews with women who received the incentives show that they all felt the vouchers were a validation of their decision to both start and continue breastfeeding.

The Breastfeeding Voucher Scheme project has been undertaken against the background of an emerging evidence base for breastfeeding incentives. Previous research has shown that implementing financial incentives in areas of low breastfeeding prevalence can increase the number of babies being breastfed¹³, with a cost-effectiveness analysis showing that these programmes can be good value for money if decision makers are willing to pay £974 (or more) per additional baby receiving breastmilk.¹⁴ More research is needed to optimise the financial incentives provided in these programmes, as well as to measure the health impacts of such interventions both on the short and long term in order to evaluate the economic efficiency of this intervention.



4. Conclusion

More research and innovation in breastfeeding is needed, not only based on the persuasiveness of health arguments to improve breastfeeding rates, but also based on the contribution that breastfeeding can make to reaching net zero targets by reducing the carbon footprint of infant formula.

As the Public Accounts Committee will question senior officials at the Department of Energy Security and Net Zero, HM Treasury and the Department for Science, Innovation and Technology on the government's approach to investment in research and innovation to deliver its net zero targets, we suggest the following question to be asked:

How is breastfeeding prioritised in research and innovation to deliver net zero targets?

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² Meedyda, S., Fahy, K., & Kable, A. (2010). Factors that positively influence breastfeeding duration to 6 months: a literature review. *Women and birth*, 23(4), 135-145.

³ Earle, S. (2002). Factors affecting the initiation of breastfeeding: implications for breastfeeding promotion. *Health promotion international*, 17(3), 205-214.

⁴ UNICED United Kingdom. (n.d.). Breastfeeding in the UK. Retrieved from <https://www.unicef.org.uk/babyfriendly/about/breastfeeding-in-the-uk/>

⁵ Karlsson, J.O., Garnett, T., Rollins, N.C. and Rööös, E., (2019). The carbon footprint of breastmilk substitutes in comparison with breastfeeding. *Journal of Cleaner Production*, 222, pp.436-445.

⁶ Long, A., Mintz-Woo, K., Daly, H., O'Connell, M., Smyth, B., & Murphy, J. D. (2021). Infant feeding and the energy transition: A comparison between decarbonising breastmilk substitutes with renewable gas and achieving the global nutrition target for breastfeeding. *Journal of Cleaner Production*, 324, 129280.

⁷ Joffe, N., Webster, F., & Shenker, N. (2019). Support for breastfeeding is an environmental imperative. *BMJ*, 367.

⁸ Smith, J.P., (2019). A commentary on the carbon footprint of milk formula: harms to planetary health and policy implications. *International Breastfeeding Journal*, 14, pp.1-7.

⁹ Dykes, F., & Griffiths, H. (1998). Societal influences upon initiation and continuation of breastfeeding. *British Journal of Midwifery*, 6(2), 76-80.

¹⁰ Ryan, R. M. (2017). *Self-Determination Theory: Basic Psychological Needs in Motivation, Development, and Wellness*. The Guilford Press. A Division of Guilford Publications, Inc. New York.

¹¹ Brown, A. (2016). What do women really want? Lessons for breastfeeding promotion and education. *Breastfeeding medicine*, 11(3), 102-110.

¹² Mavranzouli, I., Varley-Campbell, J., Stockton, S., Francis, J., Macdonald, C., Sharma, S., Fleming, P., Punter, E., Barry, C., Kallioinen, M. and Khazaezadeh, N., (2022). The cost-effectiveness of antenatal and postnatal education and support interventions for women aimed at promoting breastfeeding in the UK. *BMC Public Health*, 22(1), pp.1-22.



¹³ Relton, C., Strong, M., Thomas, K.J., Whelan, B., Walters, S.J., Burrows, J., Scott, E., Viksveen, P., Johnson, M., Baston, H. and Fox-Rushby, J., (2018). Effect of financial incentives on breastfeeding: a cluster randomized clinical trial. *Jama Pediatrics*, 172(2), pp.e174523-e174523.

¹⁴Anokye, N., Coyle, K., Relton, C., Walters, S., Strong, M., & Fox-Rushby, J. (2020). Cost-effectiveness of offering an area-level financial incentive on breast feeding: a within-cluster randomised controlled trial analysis. *Archives of disease in childhood*, 105(2), 155-159.