Twenty-five years ago consumers typically turned to a cup of sugar-sweetened espresso when they wanted a quick boost. But when Starbucks became trendy in the mid-1990s, transforming coffee's functional role from a wake-me-up beverage to a social drink, Red Bull charged into the United States and created a new beverage category that continues to evolve.

The energy drink and shots market is one of the most dynamic beverage categories within the non-alcoholic beverage industry. Total U.S. sales exceeded $12.5 billion in 2012, with sales growing 6% from 2008 to 2012, according to the report Energy Drinks and Shots: Market Trends in the U.S. from Packaged Facts, Rockville, Md.

During this time, the category progressed from tall, sleek cans to shot-style bottles, and today it encompasses all shaped and sized containers. Product formulations continue to evolve, as energy is something all adults crave, not just college students cramming for finals and night club patrons.

The demand for greater diversity in energy beverages has many formulators looking for alternate sources of energy, besides caffeine and sugar.

The most significant trend is the growing category of clean energy drinks, many of which are touting the use of plant extracts that are natural sources of caffeine and other energy-boosting ingredients.

**Getting a boost**

There are two distinct concepts that define how we think about mental energy, according to DSM Nutritional Products LLC, Parsippany, N.J. "Our brain cells need fuel to support our thought processes, and we also identify with a feeling of being awake and energetic," said Dechand Rai, senior scientific leader for DSM. "Both concepts have a good scientific rationale and are supported by a host of nutritional ingredients that contribute to mental energy."

Although the brain is only about 2% of the body's weight, it consumes about 20% of the body's total energy, said Ms. Rai. Glucose is the simplest and the favored calorie (energy)-providing carbohydrate of nerve cells.

"And caffeine is a universally recognized stimulant that boosts reaction speed and enhances alertness," Ms. Rai said. "About 80% of the energy used in the brain is related to the brain's signaling processes."

It is these processes that have product formulators exploring ingredients beyond carbohydrates and caffeine. For example, ginseng biloba is recognized for improving alertness and cognitive speed while ginseng is known for improving mood and the ability to complete cognitive tasks. Coenzyme Q10 and B vitamins don't contribute energy per se, but they support energy generation at the cellular level.

Despite issues concerning the safety of energy drinks, in particular the frequency of consumption by young consumers and the large doses of caffeine they are ingesting, the category is experiencing an influx of new players, and at the same time the original marketers are adding new products to their line-up.

Earlier this year, The Hain Celestial Group Inc., Malville, N.Y., rolled out Enervit Green Tea Energy Shots, which are powered by green tea's inherent caffeine. The beverages are also enhanced with B vitamins and ginseng.

Xyience, Las Vegas, marketers of sugar-free and zero-calorie Xenergy drinks, recently added "plus" products, including Xenergy + True Hydration, Xenergy + Tea, and Xenergy + Lemonade, to the product line. Since the beverages are sugar-free, carbohydrates are not a source of energy in any of the beverages. The drinks include a proprietary blend of B vitamins, caffeine and ginseng, along with other functional ingredients recognized for contributing to mental energy, including D-glucuronolactone, gamma, inositol, L-carntine and taurine.

**Next generation ingredients**

At the Institute of Food Technologists annual meeting and food exposition, held July 13-16 in Chicago, a number of ingredient suppliers showcased next-generation energy beverages that included more than a dose of caffeine.

For example, BASF Corp., Florham Park, N.J., featured a low-calorie tropical drink containing three of the company's energizing ingredients: caffeine and vitamins B5 and B12. DSM sampled 2 oz Energy Plus Shots made with a premix containing ingredients such as B...
those in the B family, enzymes and all of the essential amino acids. Maca root is known to stimulate and nourish the hypothalamus and pituitary glands and is known to provide energy in the form of improved libido.

The theme at Morris Platek, N.J.-based Beneo Inc.'s exhibit during the LFTC show was "smart energy management." The company showcased how its specialty carbohydrates and prebiotic fibers address weight management from an energy perspective.

"The key to a sustainable and healthy weight is to keep the balance between calorie intake and energy output," said Joseph O'Neill, president and general manager.

Beneo offers an ingredient that provides a sustainable source of energy.

"Isomaltulose is derived from sugar beets," Mr. O'Neill said. "It is a fully digested carbohydrate, but it is digested more slowly than other sweeteners, resulting in a full supply of energy from glucose over a longer period of time. Being low-glycemic, it releases energy the balanced way without sudden peaks and drops of the blood glucose level."

Isomaltulose also has been shown to promote the body's own fat oxidation. This means that it increases the ratio of energy derived from fat relative to the total amount of required energy while active, leaving carbohydrate stores available for longer. Furthermore, it is the first fully digestible tooth-friendly carbohydrate.

John Deere Innovations Inc., Miltown, N.J., uses isomaltulose in 8th Degree Low GI Performance Drinks. In addition to providing a sustained source of carbohydrates, the drinks are fortified with B vitamins.

RiboHex, a naturally occurring sugar made in the body from glucose, also accentuates the body's natural process of energy synthesis. Marketed by Bioenergy Life Science Inc., Minneapolis, riboHex helps to reduce the loss of energy during stress and accelerates energy and tissue recovery. Through this action, riboHex helps muscle glycogen regenerate lost energy and potentially minimizes any physiological consequences of this energy depletion situation.

Full Throttle, an energy drink produced by The Coca-Cola Co., Atlanta, through its Pure Beverage business unit, has long used riboHex, along with caffeine and vitamin B5, to deliver energy to consumers.

David Sprinkle, research director for Packaged Facts, believes energy drinks will continue to evolve as different consumer segments discover the quick boost the beverages provide.

"Brand line extensions and new marketer entry are both important to meeting varied consumer needs and keeping short-attention-span consumers engaged," Mr. Sprinkle said. "Energy drink purveyors can retain their edge by taking brand imaging, product innovation, flavor juxtaposition, packaging technology and marketing tactics to a new level of extremity."

— Donna Berry